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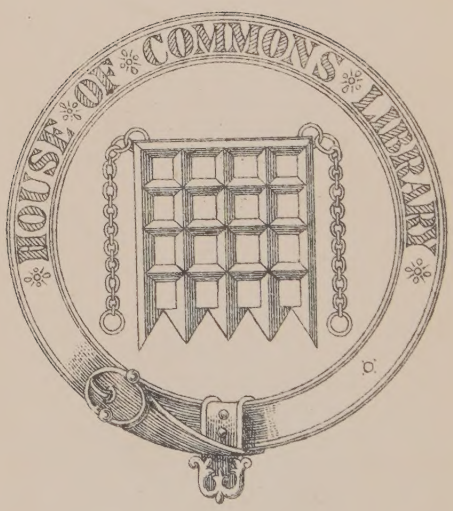
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WOMEN IN THE FACTORY

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WOMEN IN THE FACTORY

AN ADMINISTRATIVE ADVENTURE, 1893 TO 1921

BY ADELAIDE MARY ANDERSON
D.B.E., M.A.
FORMERLY HIS MAJESTY'S PRINCIPAL LADY INSPECTOR OF FACTORIES, HOME OFFICE

FOREWORD BY THE
RIGHT HON. THE VISCOUNT CAVE, G.C.M.G
LORD OF APPEAL; FORMERLY HIS MAJESTY'S PRINCIPAL SECRETARY OF STATE FOR THE HOME DEPARTMENT

"Thou, O God, dost sell us all good things at the price of labour.
LEONARDO DA VINCI.

LONDON
JOHN MURRAY, ALBEMARLE STREET
1922

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DEDICATED TO

ALL WOMEN WORKERS

OF GREAT BRITAIN AND IRELAND

FOREWORD

THIS book tells the story of the Woman Inspectorate of Factories and Workshops from its beginning in 1893, when the first Women Inspectors (Miss May Abraham and Miss Mary Paterson) made their first inspection, until the year 1921, when thirty Women Inspectors saw the fruits of the work of their branch, not only in greatly developed protection for the woman worker, but also in her own increased capacity to help herself.

It was a story worth the telling, for it is a chronicle of a steady and dogged campaign, of few defeats and many victories. The adversaries to be met were all the ills which threaten the "factory girl"—poisoning by lead or phosphorus or arsenic or mercury, insanitary or unventilated rooms, accidents from unsafe machinery, phthisis, anthrax, overstrain, truck and sweating, and more besides. Readers who like a "thrill" will perhaps begin with the chapters on "Dangerous Trades" and on the War; and if their imagination serves them, they may read between the lines of those brief records stories of suffering, of endurance, and of rescue, which will set them wondering why our predecessors so long grudged to the woman worker the help which only a woman can give.

But the whole book, with its documented record of steady grinding effort and hard-won success, is well worth reading.

Dame Adelaide Anderson went through it all, and for twenty-four out of the twenty-eight years with which the volume is concerned filled the responsible position of Chief Woman Inspector with untiring devotion and conspicuous success. It was plainly "up to" her to write the history of the struggle; and all will like to read it who honour our working women for their work and value their welfare.

(*Signed*) CAVE.

RICHMOND,
March 30, 1922.

AUTHOR'S PREFACE

The writing of the following story of what Women Inspectors did for women and girl workers under the Factory Acts and Truck Acts was undertaken in response to the wish of friends and colleagues that it should be told, while memory was fresh, by one who had seen the largest part of the conditions and immediate effects of the work—a work carried on under aims and organisation that are now undergoing change.

The aims and the starting-point of the past organisation are shown in the Introduction, and the outcome, down to 1921, is unfolded in the following chapters.

The material available in official reports for those who wish to study the facts more closely is so full of incident that, with the best will to be brief, it has been difficult to tell the tale shortly. Keeping entirely to published official records the whole could be told over again with fresh illustrations. And yet much that was significant and enlightening can only be seen in innumerable notices in the daily and weekly press and monthly reviews of the period; a fairly full collection of these exists, but they could only be quoted occasionally in these

pages. Their correspondence in general tendency with the outlook shown in Parliamentary Debates—of which an account is given in Chapter VI.—is noteworthy.

Next to the breadth of the field of action of the Women Inspectorate, and the variety of their contacts with local administration and the courts, as well as with industry, the smallness of their numbers from 1893 to 1914 strikes the mind. The strength of the impulse that sustained and carried them through their years of labour may be traced to conditions summed up in words spoken to one of them by a woman toiling at a heavy task, "Is it right that I should have to do this work and only have eight shillings a week for it?"

There was a dominating impulse towards relieving the hardships and sufferings of working women that drew all the women who entered the Factory Department into a real unity of endeavour—whatever their social or political outlook before entering.

It is in the same spirit that they have lent me indispensable help in the completing of this little book. I wish gratefully to acknowledge the time and thought freely given to it by those who have long worked with me. Miss Martindale has critically read through all the typed manuscript, Miss Squire the chapter on Wages and the Truck Acts. Miss Squire has also most kindly revised the Appendix I. on Special Regulations for Dangerous Trades, written in 1913, and brought the details

up to the present time. Miss Escreet supplied me with most helpful summaries from the mass of material in Annual Reports on child labour, heavy weights, and religious and charitable institutions. Miss Maura Brooke-Gwynne has devoted much time and skill to a literary criticism of the text. Miss Paterson and Mrs. Drury have kindly written special contributions, the former on mothers and child labour—subjects of special appeal to Women Inspectors—the latter on a stirring day in the life of a Factory Inspector. Finally, I wish to thank Mr. Gerald Bellhouse for some figures in the Introduction, and Dr. Legge for kindly reading through the chapter on Dangerous Trades, for his helpful comments, and for the tabulation of reported cases of industrial poisoning. They are in no way responsible, however, for my facts or opinions.

A. M. A.

University Women's Club,
2, Audley Square, W.
April 2, 1922.

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WOMEN IN THE FACTORY

CHAPTER I

INTRODUCTION: HOW WOMEN INSPECTORS CAME, AND WHAT THEY CAME TO DO

THIS book aims at giving some account of an enterprise that is felt by the Women Officers who lived through it to have been a great experience and a great adventure in the service of the State and Nation —an account that must be somewhat less and yet more than a chronicle.

It is hoped, with the aid of outstanding facts and features recorded in many Blue-books and other documents issued during the time, to give a picture of the undertakings and experiences of these women, both at the outset and through the experimental development of their administration of Acts and regulations for women in industry, and to trace changes that have followed in conditions of factory life in a period of little over a quarter of a century.

Personality and the idealising powers of youth (our average age at the beginning was twenty-seven years), embarking on a calling that involved conduct of legal proceedings and much other technical knowledge of an entirely novel kind for women of that day, counted for much. We had also liberal, kindly direction and encouragements

behind our efforts from the higher authorities responsible for sanctioning and carrying out the decision to appoint us. Yet the main impetus came from without, in the needs of the women workers who had persistently called—from 1878 onwards—for the personal aid and understanding of "Women Inspectors," armed with authority and powers to enquire into and enforce remedies for wrong conditions, or to persuade sympathetic employers to provide amenities that the law could not enforce.

Much that seemed novel then has, through the publicity of our work and the spontaneous lively interest taken in Parliament and elsewhere in our published reports, become part of the natural order of things. Yet in those days the first appearance of a Woman Inspector in her proper field of work, whether inside a factory or workshop* or on the solicitors' bench in the police courts, was liable to cause a sensation of surprise, sometimes very favourable to the new-comer.

"Are *you* the lady inspector? Why, I expected to see a woman six feet high and a perfect virago;" or, "Girls, it is a lady this time, come and tell her everything she wants to know;" or (in Ireland), "We had a gentleman inspector here last month, and he said we must take dinner at the same hour every day: now a lady like you will know *that* is impossible!" In police courts it was not unknown for waiting solicitors to enter with keen interest into the merits of our cases and even try to offer professional hints in support of our amateur efforts. Yet the following is a typical press comment of

* See Note, p. 21.

early years: "A small sensation was caused in K—— Police Court when for the first time a lady advocate appeared. . . . She made her statement with as much clearness and ease as any more accustomed advocate, and as the facts and laws were alike indisputable, conviction necessarily followed."

When this story begins, in great industrial communities of Europe, and pre-eminently in Great Britain, women's labour in industry had for more than a hundred years fundamentally depended, without control by women, on such organisation as was furnished by capitalist and middlemen employers, in a factory system that had been completely severed from domestic life. Trade union organisation for women was generally a small, young, and fragile plant where it existed at all. In textile factories for upwards of fifty years Factory Inspectors had applied certain outstanding statutory limits and requirements in matters of hours of labour, elementary sanitation, and safety; and for a much shorter time in many non-textile factories. Glamour had been lent to these questions of regulation by movements for reform led by such outstanding personalities as Robert Owen, Shaftesbury, Peel, Oastler, Sadler. The fact remained, however, as official witnesses assured the Royal Commission on Labour in 1891-92, that women workers themselves tendered practically none of the complaints that the Inspectors were there to remedy and to which they looked for clues in exercising their protective functions.*

* Minutes of Evidence, Group C, Vol. I. Questions 4638 and 6830.

Apart from the few industries where women had in some degree carried their traditional skill over from the domestic system of industry into certain factory processes—I have to write in few words of a many-sided, unevenly-moving change—the entry and ever-extending rule of the power-engine had brought "lower grade work and diminished industrial self-respect"* for women workers in a wide field. The loss also of leadership and supervision by fellow-women of better education in the "making of things" (such as soap, candles, and the many other articles formerly made at home) that obtained under the domestic system—that is, by women more habituated than workers to exercise of direction—brought a new social cleavage between them and working women. This meant an incalculable loss to both classes of women. Yet it meant still more for the whole community—the elimination, for a dark period, of the guiding ideas of women in regard to conditions essential for a good industrial life of both women and men.

Thus, the factory system of the nineteenth century, "unsuited as we now know it to have been to men, was far more unsuited to women."† For the worker it emptied more than half the meaning from the ancient symbol of a social order when *master* meant *master of craft*, "As the eyes of servants look unto the hands of their masters and the eyes of a maiden unto the hand of her mistress.'

* Report of Women's Employment Committee, Ministry of Reconstruction, 1919, Cd. 9239, p. 60.

† *Ibid.*

It wholly removed into the realms of mythology classic pictures of the days when women's industries were entirely home industries—of Nausicaa and her maiden laundresses on the seashore of Corcyra, or of Penelope weaving in the days when "Pallas taught the texture of the loom."

While mechanical power mainly ruled, instead of serving, in the factory, the intervention of State regulation merely prevented the greatest abuses. Even constructive and efficient application of scientific standards to human conditions of manual work was almost unthought of, and the withdrawal of the poet from the arena of industry proclaimed the essential barbarity of its character.

And yet the official life that was lived by the Women Inspectors in those early days of infinite surprises and appeals was a most lovable and enthralling one, of great movement and happiness. We escaped all fear of "venturing the hand into the spinning cog-wheels of the huge, implacable machine." How much we owed to the fact that—in a wonderful ignorance of ordinary official method and tradition—we were sent out into a wide world to find our tasks; sent with powers that could and did effect changes, having eyes and hearts ready and anxious to read the meaning of the system under which a million and a half of our fellow-country women made the things needed to clothe and feed the body and to furnish and equip the home! Understanding of the basis from which we set out can hardly be attained without a brief survey of the stages in the movement that led to our appointment.

On February 19, 1891, Miss Emily Faithful, after an interview with the Home Secretary, Lord Aberdare, about the working of the Factory Act, wrote a letter to *The Times*. She said that as long ago as 1872 the information she received from various sources strengthened her conviction that Women Inspectors were necessary if certain evils were to be redressed and rules enforced in places where women were employed. The first effectual advocacy of the appointment of women as Inspectors came, however, from a leader in Women's Trade Union Organisation, Mrs. Emma Ann Paterson, wife of Thomas Paterson, " a man of genius and of remarkable range of knowledge belonging to the ranks of labour." Working women owe to her, said Mr. Hodgson Pratt, in an obituary notice, " an eternal debt for her wise, practical, and incessant labours. She founded in 1874 and conducted the Women's Protective and Provident League.* It was not easy to teach ill-paid, overworked women that by association among themselves they could raise their position . . . and combine for a demand of fair treatment by employers. Women accustomed to think themselves too weak and dependent, too ' inferior,' women isolated and struggling for bare life . . . how could they combine or do anything ? Emma Paterson has taught hundreds of them—bookbinders, upholstresses, dressmakers, machinists, tailoresses, and others—that they can do all this. She has given them a new life, shown them the noble idea of mutual help and service . . . and given them the power of organisation and self-

* Afterwards the Women's Trade Union League.

government."* Mrs. Paterson and another member of the league were deputed in 1875 to represent two of the London Women's Unions at the Trade Union Congress in Glasgow, and there and in various other industrial centres of Great Britain, she extended her activities for trade union organisation of women.

In the year 1878—the year of the first great consolidation of numerous Factory Acts—at the Bristol Meeting of Trade Union Congress Mrs. Paterson moved to include " women " in a resolution urging upon the Government the appointment of " practical working men " as Inspectors under the Factory Act. This was carried, and in 1881 she arranged for a conference, at which Lord Shaftesbury presided, to advocate the appointment of women as Factory Inspectors. She did not live to see the reform, as she died in December, 1886.

Although Trade Union Congress never failed to pass the amendment in favour of appointment of working women as Inspectors, brought up year after year by successors to Mrs. Paterson, Parliamentary Committee was either unfavourable or lukewarm. " Oh, pass it," one great person is reported to have said; " it don't matter, they will never get it." Fresh factors were needed to bring the administrative reform into being.

In 1899, when a doubt had been expressed by Mr. Matthews, Home Secretary, whether he had power to appoint a woman, and even whether there would be enough work for her to do if he had, the

* From an obituary notice by Hodgson Pratt in the *Women's Union Journal*, in December, 1886.

Fabian Society inserted a clause (eventually proved unnecessary) in an Eight Hours Bill, expressly declaring that women were eligible for the Inspectorate. Year after year the pressure grew stronger from various sides, and was in no way lessened by the appointment between 1881 and 1890 of a considerable number of "practical working men" as Inspectors.

As the agitation grew, the burden on women of ever severer speeding-up of machinery and the so-called "driving system" in cotton mills, of excessively long hours and overtime in the dress and clothing trades, of "sweated" wages in various low-grade industries and outwork, and of the increasingly-felt evils of bad sanitation, fines, and deductions from uncertain wages, all gave point and urgency to this claim. While wages for men were rising, for women, on the whole, they were stationary or falling. Enquiries into the sweating system had shown its worst features to be low wages, long hours, and insanitary surroundings. In spite of the long years since Hood wrote his "Song of the Shirt," these adverse conditions continued to affect women. Middle and upper class women's political organisations began to move energetically. The Women's Liberal Association and Women's Liberal Federation had this question, annually on their agenda, discussed, and resolutions passed from 1890 onwards.

As Miss I. O. Ford wrote in 1896: "The idea that it was not right, that it was unjust and sometimes even cruel, for women to have no one but men to whom they could appeal against any sort of abuse,

had been steadily growing in people's minds. It was an idea that appealed to everyone, both rich and poor." Miss Ford had already spoken repeatedly in this sense, notably in 1892 at the Bristol meeting of the National Council of Women Workers.

At last, between 1891 and 1893, the turning-point in the movement came, with the appointment and work of the Royal Commission on Labour. Four Women Assistant Commissioners were appointed at an early stage in the proceedings. One, Miss May Abraham, Secretary to Lady Dilke (better known as Mrs. H. J. Tennant, C.H.), became in the spring of 1893 one of the two first Women Factory Inspectors under the Home Office, the other being Miss Mary Paterson, with valuable experience of Labour questions in Scotland. Another Assistant Commissioner, Miss Clara Collett, became special correspondent for women's industrial conditions to the Statistical Department of the Board of Trade. The report of the Women Assistant Commissioners, the first official women investigators of industrial conditions, received high praise and conclusively supported the demand for appointment of Women Inspectors. One of the two Secretaries of the Commission, Mr. Geoffrey Drage, furthered the movement by employing University women and giving them opportunity and training as clerks to the Commission. After the appointment of Miss Lucy Deane in April, 1894, two of his staff were added to the Inspectorate, Miss A. M. Anderson (July, 1894), and Miss A. Tracey (1897), bringing additional experience in précis-writing and knowledge of foreign reports, especially of French, German, and

Austrian industrial codes. Miss R. E. Squire, appointed in December, 1895, brought, like Miss Deane, fresh and good experience as a Sanitary Inspector. These first five Inspectors have all, in time, passed to other tasks and responsibilities.

The comparative survey of international Labour questions in the chief industrial countries that was undertaken by the Royal Commission on Labour followed soon after the work of the International Conference on regulation of conditions of work in factories and mines, held in Berlin in March, 1890, at the invitation of the German Emperor. That conference was followed in England by the passing of the Factory Act of 1891. This limited the employment of women after childbirth, raised the age of admission and employment of a child, and provided for regulation of dangerous and injurious trades. It is now of peculiar interest that that "forerunner" of the Labour Convention under the Peace Treaty of 1919 should be in a manner linked with the first effectual employment of women as Factory Inspectors.

At a political meeting of the National Liberal Federation in January, 1893, Mr. Asquith spoke as Home Secretary, among other subjects, on Administration of Factory Laws, promising extension of the Inspectorate, and adding: "I hope I may be able at the same time to do something—it will not be much—to gratify the desires of our lady friends for female inspection." He did far more; he gave them their liberal starting-point and wide field of activity. Opportunities were maintained and extended by Sir Matthew White Ridley and a long succession

of Home Secretaries. Permanent Under-Secretaries, too, furthered the work in its earliest stages by carefully planned instructions; Sir Godfrey Lushington was the first, and Sir Kenelm Digby succeeded him in January, 1895, and largely guided our legal work through nine eventful years. Sir Mackenzie Chalmers followed him, until he in turn was succeeded, in 1908, by Sir Edward Troup. It was the last who gave evidence to the Royal Commission on the Civil Service in 1913 that the work of the Women Inspectors, expressly organised as it was on parallel lines with the men's, was comparable with and as good as theirs.

The quality of the earliest Women Inspectors did much to decide the official status of women in the Inspectorate. Between some of the official witnesses to the Labour Commission, who urged that the appointments—admitted to be inevitable—should be solely as subordinate assistants, "never to be called on to discharge the higher duties of the office," and outside claimants, who pressed for their full appointment to *all* the powers and duties of an Inspector, there stood a middle party with moderating views. From them, led by Lady Dilke, came the advice that women should enter as a special class of officers to serve in trades in which women were employed. Somewhere between the extreme limits proposed the higher official decision was made. It was there, in women's trades, the field at that time of women's greatest need, that the new Inspectors found their practically limitless work. And by the decision they were saved, first, from a hampering necessity of working entirely

under conditions and according to standards already prescribed before they entered with their new instinctive understanding of complaints made to them by working women. Secondly, they were saved from losing themselves in an overpowering mass of technical requirements, such as elaborate fencing of machinery* primarily affecting men, where—presumably—Men Inspectors were sufficient without women's aid. At the beginning their instructions allowed them to take up any questions affecting women and girls, including fencing. For a time, and at their own instance, they referred all fencing to the Men Inspectors, while they turned almost exclusively to questions of general hygiene (cleanliness, ventilation, temperature, sanitary conveniences, etc.), hours, excessive overtime, fines and deductions from wages, payment in kind in various parts of the United Kingdom, dangerous and injurious processes, industrial poisoning, employment of young workers, and of women after childbirth; and to the encouragement of employers making voluntary welfare arrangements in the factories. Later, from 1901 onwards, they took up special questions of fencing affecting women in laundries and clothing factories, and there they succeeded in standardising methods.

The Women Inspectors were, in fact, free under the early official instructions to devote the con-

* "Fencing" is a term used but not defined in the Factory Act, in Section 10 of 1901. Under this section, guards, automatic as well as fixed, are required for dangerous machinery. Other dangerous parts—*e.g.*, "mill gearing"—if not safe by position must be securely fenced.

centrated energy of heart and mind, in enthusiastic "team-work," to enquiry and action on these most urgent problems. Happily they entered just when public opinion, as distinct from specialised knowledge, was awakening to the immense extent of injury and loss and to the great need for constructive reforms in industrial life. Their first Chief (under the Home Secretary, who had initiated this addition to the Inspectorate), was Mr. R. E. Sprague Oram, C.B. During his administration the important new provisions of the Factory Act of 1891 were applied and the preparatory enquiries for the yet more important Act of 1895 were begun. This Act furnished new starting-points and made provision for more exact knowledge, in requiring regular returns of persons employed in a factory or workshop with particulars as to age and sex, and notification by medical practitioners and employers of cases of industrial poisoning, together with other provisions for regulation of dangerous trades. These were carried to far greater developments under our second Chief, Sir Arthur Whitelegge, K.C.B., M.D., in what may be considered the culminating period of Factory Act administration.

Before the retirement of Mr. Oram in 1896, the five Women Inspectors were, in harmony with their own wish, formally constituted a branch of the Factory Department, under immediate superintendence of Miss May Abraham, subject of course, as all branches were, to control by the Chief Inspector. Miss Abraham retired from the Inspectorate in May, 1897, a year after marriage, and the branch continued from that year until August 1, 1921,

under direction of the writer of this book. From 1896 the reports of the women were, until 1914 inclusive, issued over the signature of this head of the branch, as a separate section in the Annual Report of the Chief Inspector, thus giving a clear history of the progress of their work. Staff Committees to enquire into and make recommendations on organisation came and went at intervals of a few years, but the only important changes affecting organisation of the Women Inspectors' work that came before 1921 were in 1899 and in 1908. In 1899 came the useful devolution, never extended beyond two districts, of special district charge of certain women's industries into the Women Inspectors' hands. In the later year came the creating of new group centres in the chief industrial cities (Glasgow, Manchester, Birmingham, etc.), where the Women Inspectors, under charge of a senior woman, carried on their routine general inspection and enquiries into complaints in factories employing women and girls, but with newly defined duties, investigating notified cases of industrial poisoning, accidents, and other matters specially affecting women. All this work, however, was subject to the central direction at the Home Office through the Principal Woman Inspector, and was carried on in definitely regulated co-operation with their colleagues, the Men Inspectors in charge of Districts, as well as the Medical and Engineering Inspectors.

The number of Women Inspectors grew, from five in 1897, to twenty-one just before the Great War in 1914, increasing by temporary additions during the War to a maximum of thirty. From

this point, further and adequate extension in numbers of the women's branch was admittedly impracticable without reorganisation of a fundamental character. To prevent cumbrous dual inspection of factories largely employing women it was necessary to have either well-defined sharing and division of the whole work of inspection as between men and women, with interchange of Inspectors as regards any factories not employing men or women exclusively; or a fusion more or less complete of men and women for *all* duties and responsibilities. This assumes that broadly they are alike effective, whether for enforcing safety of men and boys in shipbuilding, docks, blast furnaces, foundries, engineering works, etc., or for securing health and safety of women and girls in fruit-preserving and confectionery works, laundries, corset factories, millinery, mantle and shirt and collar factories, textile factories.

Fusion was the line of development chosen by the Home Office, under a scheme that allowed in 1921 for 42 Women and 195 Men Inspectors; this could not then be fully carried out as to numbers.

It is impossible to state exactly the present proportionate number of men and women in factories and workshops for purposes of comparison with the earliest systematic figures, which were published by the Factory Department in 1896. At that time there were in the United Kingdom 144,000 factories and workshops in which 1,403,568 women and girls and 2,699,917 men and boys were employed. These figures had risen by 1907 to 1,852,241 women and girls and 3,274,868 men and boys. When the War

broke out there were nearly 2,000,000 women and girls employed in factories and workshops. By the end of the War there were 3,000,000 women and girls industrially employed, and in 1919 the women and girls still numbered over 2,000,000 in a total of over 6,000,000 male and female. The rise and fall of "substitution" during the War and of unemployment in 1920 to 1921, makes more recent exact comparison difficult. At the outside the ratio of female to all workers can hardly exceed 35 per cent.

While the reorganisation of the Inspectorate that began in August, 1921, rounds off a well-marked epoch in Factory Act administration, giving point to the choice of period covered by this book, it is well to remember that in industry itself there remains, for the present, small change in the division of occupations between men and women workers.

The hopes of a substantial widening of women workers' activities, to follow after the great work of their substitution for men in factories during the War, have not been fulfilled, and in some processes women have been excluded by the unions with increased stringency since the War. The ratio of men and women in industry probably remains somewhere near that in 1907. Thus the greater numbers of men with their immense problems of safety and accident prevention provide the largest call on the time of the whole Inspectorate. And Women Inspectors are now bound to take a considerable share of this work.

A great gain may be achieved by developing fuller mutual interchange of special knowledge and special experience between Men and Women In-

spectors as regards hygiene, safety, and welfare of all the workers at a time when Inspectors are becoming less and less corrective, and more and more constructive, in their functions. It was a matter of common regret among the earlier Women Inspectors that they could do so little, even indirectly, to further much-needed reform in conditions of health and welfare for men and boy workers. "Let the Women Inspectors come into our shops," said a bold and advanced male trade union worker at a meeting, early in the twentieth century, at which the writer explained dangerous trades regulations; "they seem to be able to frighten employers into doing things!"

Any change of organisation can, however, in the long run, be weighed and judged only by the result in increased effectiveness and fineness of inspection, not by greater official convenience, nor by a theory of equality of men and women. We have yet to learn whether in face of the actualities of industrial life complete fusion of the functions and activities of Men and Women Inspectors can serve the many distinct needs of men and women in factories and workshops better than some degree of specialisation and co-ordination.

In order to secure permanent, equal eligibility of men and women for future appointments and promotions in the department, some equivalence in numbers is necessary. A minority which is no more than approximately a fifth of the whole has small chance of putting up as many able candidates for promotion as the larger majority. As a general rule the minority has, further, the extra handicap

of compulsory retirement on marriage. Thus some approximation of the number of Women Inspectors to at least the relative proportion of women in industry is a necessary corollary of "fusion" of the Inspectorate. The value of the special contribution brought by Women Factory Inspectors to the regulation of factory life for women and girls is too well and authoritatively established to be, as it were, accidentally lost.

The testimony of the Women's Employment Committee under the Ministry of Reconstruction, in 1919, as to the great "administrative success" of the work of the Women Inspectors is strong.* It can be tried and tested by a careful study of the range of subjects the Women Inspectors covered, and of the records of their actions, in the Annual Reports of the Chief Inspector issued by the Home Office from 1894 to 1914; by the testimony of working women; by the official reports of Parliamentary Debates on Home Office Administration, and on amending Factory Acts embodying recommendations which they had been emboldened to make. More arresting and convincing, however, for the general reader may be observations from a distinguished onlooker outside official ranks.

Listen to the voice of Canon Scott Holland, speaking in July, 1896, in the Editorial Notes of the *Commonwealth*, on the new light that was appearing in the dark places of factory industry:

"What used to be one of the most depressing and uninforming of Annual Blue-books is now (issue for 1895) one of the most interesting and valuable.

* Report quoted Cd. 9239, p. 61.

. . . I take from my shelf the starved-looking report of the 'eighties' and early 'nineties' and lay it out by the side of the two stout volumes just issued, and wish that the people who are losing heart . . . all the wise people who have seen so many things in their time that they can never believe in an upright and vigilant officialdom, would come and turn over the leaves with me. . . . It is the report of crusaders; it brims with suggestions of reform. . . . You feel that to be a Factory Inspector is to be something splendid and stirring and effective; that these men and women are the missionaries of order and health, and that they bring hope with them where they go.

"The state of things is in many ways disgracefully bad, but it is something to see the State itself exposing the evil and casting about for a cure. Since 1892 the staff has been increased by 50 per cent. . . .

"The joint report (of the Women Inspectors) is a record of tremendous work, accomplished with courage and judgment.

"The work of levelling up as to safety and health goes on apace. . . . It is cheering to see that many manufacturers are becoming alive to the effects of industry on health. . . .

"The report has a special interest on account of its being the valedictory message of Mr. Sprague Oram, H.M. Chief Inspector, who retires after half a century of public service. . . . It is no secret that much of the go-ahead work of the last few years has been due to his enthusiasm, initiative, and devotion. . . . He hands over his duties to Dr. Whitelegge, a distinguished authority on public health, who should be a tower of strength . . . in the work of making every factory and workshop fit for human beings to work in."

The entering of a breath of new life, obvious as it becomes in the Annual Reports of 1895, 1896, and onwards, is not, and must not be, attributed disproportionately to the entry and work of the small band of Women Inspectors—for that itself sprang from a wider movement affecting the whole department. None the less, it was a powerful new factor that gained in effectiveness as time went on. And it preceded in time even the highly significant and essential addition of Medical Inspectors considered in Chapter IV. If we do not speak here in detail of the fine work done by Men Inspectors, it is because that lies outside the scope of this brief survey. They have had great pioneering days in the early battles for Factory Act regulation. Their service when Women Inspectors entered with a new task before them had yet to be fully developed in the light of scientific knowledge and method.

If these pages in any true measure picture, for twentieth-century workers and employers, certain conditions in industry during the twenty-eight years under review; if they can put any clues into the hands of legislators and administrators regarding women's share and needs in industry, they will fulfil their aim. They are designed to serve as a finger-post to the original documents. By imaginative study of them alone can the growth and change of this profoundly interesting period be seen. During its course, after about ninety years of tentative, experimental Factory Acts, something like civilisation began to dawn inside industry. Out of it there emerges, from about the year 1918, glimpses of the possibility of a new order, when—instead of

intervention by the State between diverging interests of workers and employers—regulation can partly spring from within industry itself, by Joint Councils and Works' Committees, as well as by representative Trade Boards. Factory Inspectors may then become mainly technical and expert advisers and counsellors in factories that are developing a life of co-operation between manual workers and employers as co-organisers of production.

NOTE.—The terms "factory" and "workshop" are defined in Section 149 of the Factory and Workshop Act, 1901.

Broadly they apply to any workplace where the manufacture of any article is carried on by way of trade or for purpose of gain and any person is working under a contract of employment. If mechanical power is used in aid of the process, the place is a factory; if not, as a rule it is a workshop; but certain workplaces—*e.g.*, tobacco works and potteries—are factories, even if there be no power applied.

CHAPTER II

THE WOMEN WORKERS AND THEIR APPEAL; EXCESSIVE HOURS, INSANITATION, AND OTHER UNCIVILISED CONDITIONS

"'It's gey handy to have the likes o' you,' a Scottish mother said when consulting Miss Vines on the effects of employment on her daughter's health."*

THE outstanding characteristics of the working women of our country that immediately appealed to the Women Factory Inspectors were their courage and their endurance, their ready trustfulness, and their loyalty. Instances of timidity, or fear of losing employment—hard to get and easily lost—by evidence necessary to establish infringements of the law, these did but throw up, in high relief, the dominating traits of the majority. The exceptions were only natural in the days of severe competition for poorly paid work, especially before the organisation in 1898 of the Industrial Law Indemnity Fund† for aiding workers dismissed by employers after giving evidence that led to proof of breaches of industrial laws.

A few months after my appointment to the Factory Department I went into a factory just as a girl of fourteen years had been carried to the local infirmary suffering from a compound fracture of

* Annual Report of the Chief Inspector, 1912, p. 113.

† Under the chairmanship of Mrs. H. J. Tennant.

her leg and other injuries. "She had been at work at a card* for several weeks and was esteemed as a careful, clever, and good worker. In the endeavour to keep her card in good order by steady cleaning, her skirt had been caught in the driving band and the mischief was done. . . . She had kept perfectly clear and conscious, and had been chiefly concerned that no one should alarm her mother, who was ill at home."† The managing foreman was much moved as he told me of this Lancashire girl's serenity and unselfishness under the sudden shock and suffering. Instances as strong and stronger could be given by any Inspector of the way that a high and fine spirit predominates when accidents and casualties occur in a factory. Other examples in 1913, eighteen years later, may be compared with that one. "Of a girl partially scalped," Miss Martindale says: "Her pluck and bravery were noteworthy; in fact, the qualities show themselves in a remarkable degree in working girls when they meet a severe physical shock;" of another, whose hand had to be amputated after vain attempts to save it, she says that the girl mastered her disappointment, and in two or three days after the operation began to practise writing with her left hand, and in a month had become almost as proficient as with the right. Or again, Miss Tracey says of fifteen cases of serious lead poisoning among women employed in a workshop, where they were "heading" yarn (dyed with a chromate of lead dye), "I visited these workers

* A carding engine in a cotton mill.

† Annual Report of the Chief Inspector, 1895, p. 112.

at their homes and found them in different stages of illness and convalescence. Their pluck will always remain fixed in my mind; although many of them were unable to put into words the suffering they had gone through, yet not one of them but was eagerly wishing to be well enough to go back to work."*

This is a spirit that is one with that we saw in the innumerable " substitute " women and munition workers in the War. And before that movement had well begun, an American employer in London had said in my hearing that British women's labour was the " best in the world," versatile, patient, and uncomplaining.

What were the characteristic features in the earlier days that the Inspectors saw—drilling and testing the women? *First*, a mute sense of industrial inferiority, outside the great textile industries, though even of them a " mill girl " could write: " Mill girls need a sensible and educated woman to further their cause. . . . How many of our women are there that have to spend most of their lives in unhealthy, badly ventilated and unsanitary mills, and must go on and tolerate the condition of things silently, not daring to complain, and even if they have courage they shrink from telling a man. A Woman Inspector would often see irregularities without being told. Her own instinct would enlighten her: I think that is one thing in her favour. . . . In cases where the law had no power to enforce alterations, frequently the Woman Inspector has by gentle arguments and

* Annual Report of the Chief Inspector, 1913, pp. 70, 89.

reasoning caused the employer to see that it was to his own advantage as well as the workers' comfort to effectuate the improvement."* *Secondly*, an absence in the great majority of factories of any woman in a position of authority. *Thirdly*, in spite of protective laws, a working day and week in which the standard hours worked by women frequently exceeded those for which men, in certain great trades, had by means of trade unions secured recognition from employers. *Fourthly*, a frequent lack of suitable or even decent and sufficient sanitary accommodation, of cleanliness of a domestic nature, and of other hygienic requirements, sometimes injuriously affecting conduct and morals. *Fifthly*, not only low average and individual wages, but on the part of pieceworkers an intolerable uncertainty as to what their rates really were; and, for all, a liability to arbitrary deductions for fines and alleged damages to work, which often brought earnings below subsistence level.

These are all evils that specially and peculiarly weighed upon women, in a haphazardly evolved factory system over which they had absolutely no control. They shared with their fellow-men other frequent, though certainly not universal, ills: excessive heat in active, and cold in sedentary, occupations; exposure to inadequately controlled dust, steam, fumes; badly drained or damp floors; handling of dangerous or injurious materials; often poor and sometimes very bad general ventilation; lack of washing conveniences, and means of pre-

* *Yorkshire Factory Times*, September 11, 1896. Article by Julia Varley.

paring and taking meals. The great matters in which men's risks far exceeded women's lay in injury by accidents from dangerous machinery, explosion, and other causes, and these remain still the largest risks to be reduced by guidance of a thoroughly skilled Inspectorate, combined with safety control through workers and employers.

A single illustration may bring home the roughness and irresponsibility of supervision of girl workers, sometimes associated in the nineties with all the hardness of factory life. The circumstances were in some features exceptional, but by no means solitary, in roughness and even barbarity, as will appear in later pages of this book. It was found, on investigation of a complaint from an onlooker, that in a large textile factory an incompetent managing foreman had, nominally as a means of discipline, turned a great fire-hose on to a large group of young tenters and weavers. The water, drawn from the mill pond and filthy, was directed over a partition upon them while they were jammed in a narrow vestibule in which they took refuge. The girls (of whom forty were examined by the Inspector) were then turned out on a cold March day, dripping, to walk in some cases several miles to their homes. The whole matter was outside the Acts and nothing could be done by the Factory Department beyond visiting the head office of the mills and drawing attention to the circumstances.* A reprimand to the foreman and his apology was so far satisfactory, but many years passed by before the idea of supervision by

* Annual Report of the Chief Inspector, 1895, p. 119.

a woman was considered in textile mills at all. It required the shock of the Great War to secure provision in a broader way, as through the Act of 1916, which first brought welfare supervision and conditions of welfare within administrative control.

The great majority of the earlier complaints related, year after year, to hours of work and sanitary matters; the former predominated, especially in the London area, and until the year 1912 complaints of legal and illegal overtime led in numbers. Complaints relating to uncertain wages under the Truck Acts and lack of piece-rate particulars steadily mounted, but this distinct subject merits a separate chapter, as do also the employment of mothers and dangerous trades. The totals of all kinds of recorded written complaints (in addition to many verbal that we received annually) rose from 381 in 1896, to 729 five years later, and to 2,025 in a further ten years. Confidence grew steadily and rapidly, until in 1819 a woman organiser could say that women working in factories of every kind of industry, in the north as in the south, strongly and " passionately " call for visits of Lady Inspectors.

Long hours of work, then, at the outset of our career were the greatest trial for working women—with home duties claiming much of their strength in most instances. The ordinary working day generally took what the Factory Acts allowed, and in the main still allow, although for at least the past ten years hours of employment have fallen to reasonable limits, not through amendment of the law, but through movement of public opinion,

growing strength of women's organisation, and common-sense of many employers. In textile factories for young persons and women these hours were, from Monday to Friday, ten, and on Saturday six and a half. In non-textile factories the hours might be respectively ten and a half, and seven and a half on Saturday.* A spell of work in textile factories could not exceed four and a half hours, and in non-textile factories five hours, without at least half an hour for a meal. In the latter case firms often found it convenient to work two five-hour spells with a break at midday of one hour, and on Saturday an unbroken spell of five hours. The heavy burden of labour on this basis was a perennial source of complaint from women and girls for which there was no remedy in the Factory Acts, and was a cause of anxiety and regret to the Women Inspectors, until the pressure of war-time production proved its ineffectiveness for increasing output.

We must also bear in mind that the legal hours in unorganised industries were frequently and widely exceeded.

A liberal allowance was made in the Acts for overtime in many non-textile industries and processes.† In such cases overtime could, if notified to the Inspector, be used on forty-eight occasions

* *I.e.*, in textile factories from 6 a.m. to 6 p.m. or 7 a.m. to 7 p.m., with two hours, which must be specified, taken off for meals; and on Saturdays 6 a.m. to 1.30 p.m., with an hour for a meal. In non-textile factories a period, 8 a.m. to 8 p.m., was also permissible.

†. Act of 1878, sect. 53, and third schedule, part three; amended by Act of 1895, sect. 14, and Act of 1901, sect. 49, second schedule.

in the year (reduced in 1901 to thirty occasions) for an additional two hours. This applied, until amended by the Act of 1895, to young persons as well as women. From 1896 onwards, the scandalous length of a fourteen-hours' day on forty-eight days in the year no longer legally overtaxed young workers of fourteen years and upwards.* Elasticity in the law for the causes allowed appeared reasonable at first sight, but what was authorised as an exception became under stress of competition a principle, and one has sympathy with the young woman who said, with a chorus of approval from her fellow-workers, to the first Woman Inspector, "The overtime exception just spoils the Factory Act!" Equally readily did a fellow-feeling rise for the workgirl who asked, "What sort of half-holiday it was that began at four o'clock in the afternoon?" In *illegal* overtime the bad habit was continued for years, and many raids and devices were necessary to overcome it. Dual employment of women in a combined retail shop and workshop was for long a source of excessive hours. Thus, when they had finished the legal day in the workshop, they might have to serve in the shop until late at night. This dual employment was not limited to the normal daily period lawful in a workshop for women until after the passing of the Act of 1901. Inspectors had to watch overstrain of this kind helplessly for years—where they could not move an employer to see the harm it was doing. The case of the little

* And even thirteen-year-old workers, when they were qualified by an educational certificate to rank as a young person.

thirteen and fourteen-year-old " matchers " in dress-making establishments had to wait for effectual remedy from another source.

A complaint we received in 1903 brought to light extreme, but by no means unprecedented, over-strain of a little girl of fourteen, legally a young person. She " was engaged to clean and sweep the workrooms, run errands, match ribbon and silks at shops, and generally do work required of young apprentices in the trade; in addition, however, she cooked the occupiers' meals, including supper; did the work of the house; arriving at the workshop first in the morning to light fires and 'tidy up,' she did not leave till 11 p.m., and appeared utterly worn out."*

In the early years the impetus of our endeavours to repress excessive hours was, at times, almost checked by a possible consequence. Portable articles of manufacture could easily be, and often were, sent home with the worker at the close of the legal day, and all the more easily in trades and quarters where there was legal and legitimate " out-work " by non-factory workers. This evil grew to considerable proportions, until the law was strengthened so as to make this evasion more difficult. It was really rooted in starvation wages, and eventually the advent of Trade Boards removed most of the incentive to this insidious mode of "sweating."† It was often extremely difficult for

* Annual Report of Chief Inspector, 1903, p. 223.

† *Ibid.*, 1910, p. 155. Section 31 of the Factory Act, 1901, restricting employment inside and outside the factory or workshop on the same day, had but a limited effect.

the wage-earner on a narrow margin to risk losing an immediate addition to her wage (even if earned by excessively long hours), through co-operating with the Inspector by giving evidence as to long hours at home. This co-operation was essential, as the Inspector's entry into the home did not rest on the same powers as entry into the factory. Yet many successful prosecutions were taken in serious cases. For example, in 1911, a girl of fifteen, working for a feather manufacturer, after working 8.30 a.m. to 7 p.m. in the workshop, took work home, and worked 8 p.m. to 11 p.m.; or a girl knotted "lancer" feathers, taken home, from 7 p.m. to 1 a.m., and from 5 a.m. next morning until she went for her day in the factory.* Here and in many other places the girl was compelled to do extra work in order to earn enough to live.

In certain processes (making preserves from fruit, preserving or curing fish, making condensed milk) overtime was legal to the extent of a fourteen-hours' day on no less than ninety-six days in the year, until the Act of 1895 reduced the figure to sixty days. The "gutting, salting, and packing of fish immediately on arrival in the fishing-boats" was altogether outside regulation by the Acts, whether for hours or sanitation—for all workers, not excepting children. By the Act of 1901 children received the protection of the Acts as regards hours of employment in this industry as in others. In 1910 at Lowestoft some women attempted a revolt against late night hours, but without success. Again, at Grimsby in 1911, a group of very young

* *Ibid.*, 1914, p. 54.

women struck against hours that were usually sixteen in the twenty-four. They were obliged to return to work, as the employer, who also employed them at other stations on the East Coast, pointed out that they had broken their contract and could claim neither wages nor return fares to their homes. At length, when a record catch of herring at Yarmouth had brought the workers' endurance to an end, a limit of daily and weekly hours was negotiated by the Factory Inspectors and voluntarily agreed to by the leading fish-curers. This has, since 1913, lessened the trials of the hardy fish-curing girls and men. The hours, unlimited during the summer months—June to September, of workers engaged in the "process of cleaning and preparing fruit, so far as necessary to prevent the spoiling of the fruit," have also been brought within a certain degree of legal control by an Order of the Secretary of State.*

Regulation of hours in laundries followed a tangled course too long to be told fully here. There was, in 1895, within and without that trade, great opposition to any control whatsoever on account of the special character of the work and its relation to the community, only half-developed as it was from domestic to factory status, and closely dependent on conservative household arrangements. This led to a loose and ineffective form of limitation of hours in the Act of 1895. The elasticity of the governing section immediately appeared to give sanction to the late hours and long days of work, "hitherto regarded as unnecessary evils tolerated in an unregulated industry. . . . The fourteen-

* See Special Order, dated September 11, 1907.

hours' day met with outbursts of indignation from women, who would 'like to see how men would stand fourteen hours of this work in heat and steam.'"* Packers and sorters alone benefited by a net reduction in a weekly total of hours that had for them often exceeded seventy hours. Sixty hours became the normal legal period, augmented, however, in seasons of pressure by permissible overtime to sixty-six hours. And these hours might be compressed into five instead of six days in the week, and could even extend, on a single day, from 8 a.m. to 11.30 p.m. The amending and consolidating Act of 1901 made no improvement in these hours, but in 1903 I was able to give the first account of a new and hopeful feature, in the "steady growth of a strong section of employers who have set their minds on inaugurating a more rational system of employment in conformity with ordinary factory hours."† This alone, the employers claimed, in views ably expressed in a new periodical, *The Power Laundry*, would raise the standards of work and workers. Very considerable improvement followed from the Act of 1907. Thus, in laundries, as in textile factories a hundred years earlier, the first determined efforts towards reform sprang from an enlightened section of employers—in this instance, however, encouraged by the Inspectors. In 1899 and 1900 they gave much time to discussing these problems with directors at the head offices of multiple laundries, run by companies. Efficient management has no doubt found that it could in

* Annual Report of Chief Inspector, 1896, p. 67.

† *Ibid.*, 1903, p. 223.

course of time compete successfully on shorter hours with less efficient management working the full legal hours. There has been high social value in the experiments in hygiene and welfare made by leaders in industry fitted by their position to secure an effective trial—in the interests not only of the worker, but also of the whole community.

Without more study of details, so much may suffice to indicate the public outlook in past days, as expressed in the law so hard to amend, on the working capacity of human beings in manufacturing industry; and it may serve to measure the change that has come about in ideas and habits in these matters.

The movement within industry itself has almost sufficed to bring the whole problem of hours out of the region of compulsory regulation into that of a reasonable, voluntary control that ought to be the natural birthright of workers in a factory system possessing unlimited capacity for large-scale production by applied power. Christian, after much suffering with his friend Hopeful in the dungeon of Giant Despair, remembered the key in his bosom that "could open any lock in Doubting Castle." And so they came out to "The King's Highway" and fared on to the Shepherds of the Delectable Mountains, whose names were "Knowledge, Experience, Watchful and Sincere."

While the illusory belief in a need for exceedingly long hours lasted, it bore most severely on the weakest manual workers — women and girls. Although the best hours for any kind of industry can only be reached by skilled scientific study, the

rough-and-ready, if slow, method of amendment by complaint has had effect. After the Acts of 1891 and 1895 had increased the means of control of illegal overtime, and when an increased Inspectorate came into activity, the first step was to enforce the legal limits. Nowhere can a more vivid account be read of the immense evil of excessive illegal employment, and of the protean forms of evasion of law, with connivance of intimidated "sweated" workers, than in the pages by Mr. Lakeman, in the Annual Reports of 1893 and 1894—published at the very time that the tide of complaints began to flow to Women Inspectors. They also said much to substantiate Mr. Lakeman's contentions that "overtime is an evil, socially, morally, commercially," weighing upon "a vast aggregation of people slavishly earning a poor living from hard taskmasters," particularly in the East End tailoring trade, where one sweating employer oppressed another below him, and the worker at the lowest end of the scale was utterly helpless. The Women Inspectors were the first to be free of a certain handicap in dealing with the evasion and obstruction that led to concealment of girl and women workers in lavatories and bedrooms, and they were the first to be able to unravel tangled threads of evidence by confidential visits to the women's own homes. Even in a very extreme case of evasion by locking of outer gates and darkly shaded windows, a Woman Inspector has been known to enter the premises before closing time and wait in a dark corner of the yard, in order to arrive in the workrooms at a suitable moment for

a complete personal observation of the extent of overtime.

So marked was the gain in detection of hidden evils that a proposal was made in 1895 by some Members of Parliament to bring bedrooms in the same building with a workshop, used by women or girls, within the scope of the Factory Acts, and to give the Woman Inspector special power of entry and inspection. Fortunately, however, the proposal was not accepted, and peculiar power was not allotted to the Woman Inspector. She was able by quick observation and action, and use of the Inspectors' ordinary powers of entry and investigation, to achieve what was needful in such cases of concealment; exceptional powers would have been fatal to that intangible, yet potent, personal influence of an Inspector, which rests largely on having no more distinction from the ordinary citizen than is just necessary to effect the work required. Inspectors have always been able to investigate matters not strictly breaches of the law and yet needing regulation. In tentatively sending a complaint of such matters, the Secretary* of the Women's Industrial Council once wrote: "I know how very much can be done by the tact and personal influence of an Inspector, and even if the Inspector effects no change, her visit does afford the workers a sense of protection which is very soothing when they are feeling aggrieved."

In manifold ways similar testimony was afforded by communications from officers of the Women's

* The late Miss Wyatt Papworth, whose constant help I desire gratefully to record.

Trade Union League, the Legal Advice Bureau for Working Women, the Industrial Law Committee, and, above all, by the late Miss Mary MacArthur.

As the work grew in publicity through press reports of prosecutions, confiding supporters sprang up in many unexpected directions. They appeared among customers of dressmaking businesses, clergy and district visitors, club leaders, schoolmistresses of half-time child workers, doctors, and many others, not to speak of parents anxious to save a daughter's health without risking loss of her employment. One of our longest and most tangled enquiries sprang from a communication from a casual reader of the *Star* newspaper.

"Immediately on receipt of a complaint"—from one or other of such sources, once wrote one Inspector to another—"we made a raid on Saturday afternoon between 5 p.m. and 6 p.m.,* and had a splendid catch, three rooms full. The man set in the yard to watch for the Inspector *offered* to let us in 'to see the housekeeper'; I merely remarked that 'that would do very nicely for us,' and he did not realise his mistake until we were half-way up the narrow staircase!" The Inspector momentarily "felt a pang" for the watchman—but a prosecution followed in due course, and the firm, of European and Transatlantic reputation as modistes and furriers, were convicted.

The theatrical costume industry, though not large, was one that for many years exercised the ingenuity and taxed the vigilance of Women Inspectors—complaints being perennial. Excessive

* The legal period closed at 4 p.m.

hours, Sunday employment, illegal homework, overcrowded workrooms, and obstruction of the Inspector, were reported in 1902-03* and at intervals in a succession of years. In 1911 there was evidence of a deliberate and organised breaking of the law in the matter of overtime that did not appear in any other industry. One London occupier, who was prosecuted twelve times in ten years, was found on three separate occasions in 1911 seriously contravening the law, a typical instance of long hours being: Friday, 8 a.m. to 12 midnight, followed by 7 a.m. to 9 p.m. on Saturday, with some Sunday employment following. Penalties of £20 and costs on conviction were evidently not deterrent.† In the great majority of their concentrated attacks upon illegal hours of employment in other industries Inspectors found that most occupiers tended to capitulate, in the end, to firmness and persistence in enforcing the legal limits.

Seaside laundries, busy in the summer season, offering residential employment to laundry girls from inland towns, presented another serious problem in suppression of evasions of the law.

Suppression of "time-cribbing" (that is, exceeding legal limits by small instalments)—during prescribed pauses for meals and just before 6 a.m.—in many textile mills in the North was a task of a detective character, on a large scale, beyond the small numbers of Women Inspectors, but one in which they at least took their proportionate share with their men colleagues. Undoubtedly women's

* Annual Report, 1902, p. 153; 1903, p. 224.
† *Ibid.*, 1911, p. 152.

services in bringing home to the employer contraventions of legal limits were more peculiarly needed where proof turned not so much on the exact moment of starting a huge engine driving machinery in a large mill, but rather on patient examination of witnesses in their homes as well as the workplace.

By the year 1912 an increasing number of complaints showed a growing determination on the part of women workers to secure such limitation of hours as was enforceable under the Factory Acts. One complaint of excessive hours in a fancy stationery factory disclosed quite an ordinary, and *legal*, state of affairs: "Fifty girls over eighteen years of age had been working weekly from 8 a.m. to 10 p.m. on three days, from 8 a.m. to 8 p.m. on two days, and from 8 a.m. to 4 p.m. on Saturday, as they were expected to do for from six to eight weeks in the busy season." For young pieceworkers the resulting fatigue can easily be imagined.*

In our earlier years of service, complaints of defects in general sanitation in the factory and workshop were, as already said, fewer than complaints of excessive or illegal hours of employment. Later on, especially after voluntary improvement in hours had begun, the workers' help in matters of general sanitation in the workplace grew in volume and understanding. The value of these complaints, in bringing the Inspector to the spot for observation of the concrete facts, was more direct and immediate than in complaints of hours where evidence was requisite from the workers. Even a vague complaint such as: "Please I would like you

* *Ibid.*, 1912, pp. 142, 145.

to call and see what sort of a place the women have to work in, as it is in an awful condition," was good, provided the correct address of the shop was given.

There were many and increasing complaints of lack of messrooms, wholesome drinking water, seats, cloakrooms, and washing conveniences, which were outside the Act until 1916. Underground and ill-lighted workrooms were also the subject of complaint, and these still, in 1921, await full hygienic control by the Factory Acts. Until the year 1901 even general ventilation of such places could not be secured, and the result may be seen in a description in 1900 of a low underground workroom, packed with machinery, the narrow window slits at street level being the sole means of ventilation, admitting dust from the street, just where the gas engine was placed. "In the back part, where pallid women stand at the machines, gas light is always burning. Here again we are powerless to order means for introduction of tolerable air."*

Ill-ventilated, badly drained, uncleanly or otherwise defective workrooms, were the subjects of many complaints on hygiene of the workplace, yet complaints on defects in sanitary accommodation† and extremes of temperature were even more numerous. Lack of means of heating or failure to use means of heating was increasingly a subject of complaint down to 1914. Many recalled the words quoted by Miss Abraham in the Annual Report of 1894: "Is it not possible to compel Mrs. —— to

* Annual Report of the Chief Inspector, 1900, p. 367.

† Unsuitable, insanitary, not separate for the sexes, or totally lacking.

give her workgirls a fire? . . . It may really mean death to some of the girls. I do not know what it will be like to-day, when they get there with their skirts and feet wet after the snow." The problem shifted, in that as in other matters of health, after successive amendments of the Act had given Inspectors power to intervene more effectually. Increased stringency of the Acts appeared to extend the number of employers anxious to improve the conditions of factory life beyond the statutory minimum. It was not only the employer, but, sometimes even more rapidly, the workers who found enlightenment in seeing standards improved or strengthened by legal requirements. At first all the weight and mass of complaints helping our administration came from the most elementary needs. And, even there, too many workers were mute, until awakened by proof that improvement was *possible*. It was only later that the natural intelligence of the worker could co-operate in building up larger and more specialised conditions of welfare. Speaking of a great step onwards in sanitation, Miss Paterson wrote, in 1902, that the indifference of the employer had resulted in a corresponding indifference on the part of the worker, who, "acquiescing at first in conditions which she feels powerless to improve, gradually ceases to feel them an offence to her. There is no doubt one loses sensitiveness to indecent arrangements just as surely as to impure air, but the moral effect in the one case is much the same as the physical effect in the other."*

* Annual Report, 1902, p. 154.

Ten years earlier some working men representatives of the Yorkshire textile industries gave it in evidence before the Royal Commission on Labour that mill life under the then existing conditions and organisation of work was "not conducive to ideas of propriety, gentleness, and nobility." Against such conditions the Women Inspectors never ceased to strive, by varied and vigorous attack on insanitary conditions that blunted perceptions of suitability, and by friendly appeals to employers that sometimes met with excellent response. Sometimes, again, action had to be taken against indescribably bad conditions that were obviously a legacy from mediæval standards, by the indirect method of laying an information against the occupier of the factory for effluvia in hot spinning rooms, before the law provided for direct attack on the ground of the unsuitability of the provision made. In a case that I took, in 1896, against a Limited Liability Company in Lancashire, after repeated written warning to the management, one of the directors appeared in court to say they had not realised the state of affairs in the mill. After a long hearing, the magistrates asked me to meet the directors out of court, with their solicitor, which I did (the Inspector in charge of the district accompanying me), in the gilded council chamber of the municipal authority. The dignified group of directors asked me then to "take the chair," and we rapidly came to a conclusion, as to the necessary constructive work, that satisfied the local sanitary authority as well as myself.

Sometimes a local authority would act vigorously

on receipt of notice of such defects from a Factory Inspector, one asking for more notifications, another inviting conference as to other mills, and they were most ready to move where they had not themselves to take the primary initiative against fellow-townsmen. A single illustration may be given in the case (by no means the worst of its kind) of a large old textile mill, where local authorities, acting on our notice, took up such matters with increasing thoroughness. "Dark, unventilated conveniences, used indiscriminately by men and women, opened directly off hot spinning rooms. . . . No attempt to secure privacy was made, the doors were without fastenings . . . the whole connected, not with a drain, but a huge cesspool—a state of things more injurious to morals and health can scarcely be imagined. The amount of accommodation was seriously inadequate, besides being unsuitable and unhealthy."* There was an element of hope in spite of the overwhelming amount of work to be done, in that most of the very worst conditions of this kind were found in the oldest industries and factories, such as Lancashire, Yorkshire, Staffordshire Potteries, and the Black Country, where the blunting of perceptions had been longest at work. This factor checked our occasional feeling of despondency at often finding the most barbarous conditions where trade union organisation was at its highest strength. Incidentally it at once confirmed the Women Inspectors in thinking that they really had a new mission as well as a more enduring place in the guardianship

* Annual Report, 1903, p. 203.

of women in industry. Even although this matter of sanitary conveniences was but an elementary one, yet it was fundamental, and the Women Inspectors were only too anxious to clear the way for their more progressive and difficult work in respect of health and physical fitness of the women and girls expressly allotted by the Home Office to their care.

The legal provisions for the sanitation of the workplace are complex; the meagre basis of law on which we had to build at first, and a few of the results secured, can only be slightly indicated.

When we began our work there was no definition in the law of what constituted overcrowding of a workroom, and only on proof (a difficult matter) of actual danger or injury to health of the persons employed could any abatement of overcrowding be enforced. Some of the worst examples were found in country towns and in attic workrooms, often used as bedrooms. Miss Paterson cited a case in 1894 where only 91 cubic feet of space was allowed per person in a room with a roof 6 feet 4 inches in height. Overcrowding was always rare in factories, however, and complaints chiefly led us to cases of crowded floor space, not definitely illegal. For general *ventilation*, as distinct from mechanical exhaust for dust, gases, vapours, and other impurities generated by the work, there was no legal provision before 1901, and to this question in its connection with lighting, heating, and cleanliness I will presently revert. There was no provision at all touching maintenance of a *reasonable temperature* before the Act of 1895. The provision then made was quickly found defective, and we had to wait

until 1901 for powers to enforce means of heating that did not interfere with purity of the air. *Drainage* of workroom floors liable to become wet could not (except under a special clause in the Act of 1895 affecting laundries only) be enforced before the Act of 1901. Power to determine what was *sufficient and suitable sanitary accommodation* by an order of the Secretary of State was first provided for by the Act of 1901. This had no legal force where local sanitary authorities—with widely varying standards—had adopted certain powers to regulate the matter under the Public Health Acts. In 1903 such an order was first made, based on the experience and recommendations of the Women Inspectors. This order gradually set the standard frequently adopted by local authorities, but still, in 1921, this remains merely a voluntary matter in the majority of sanitary districts outside Scotland. "The new rules are just coming into force here," said one working woman correspondent to an Inspector, in 1903; "they give us just what we need."* In the previous years "a rain of resolutions and petitions" reached my office from organised working women, which demonstrated that working women were, to use their own words, "most ardently favourable in respect of the draft order of the Home Secretary" just referred to, "so that decent and satisfactory arrangements may be completed and the hands of Inspectors strengthened in the discharge of duty."† As regards *cleanliness* of the workplace, that universal need,

* Annual Report, 1903, p. 203.

† *Ibid.*, 1902, p. 154.

there has been since 1878 an absolute requirement in the forefront of the Act that every factory shall be "kept in a cleanly state." The duty of periodical cleansing by lime-washing (or other prescribed methods) of walls, ceilings, etc., has too often been read as covering the whole ground, and methodical and regular cleansing of floors and benches, by moist as well as dry methods, has always been a subject to which Women Inspectors have had largely to devote their powers of persuasion.

The provision of *drinking water*—a fundamental need of human beings engaged in physical labour, and a subject of frequent complaint from 1894 onwards—was left solely to regulation by local sanitary authorities, until an order was made in 1917, under powers given by the Factories and Miscellaneous Provisions Act of 1916. This secured, at last, that an order requiring a conveniently accessible supply of wholesome drinking water could be enforced in every factory or workshop employing twenty-five or more workers. The *lighting* of factories and workshops, whether natural or artificial, has never yet been generally regulated by any of the Acts from 1878 to 1916, although there are many references to it in our published reports from 1897 onwards. In 1911 the special Report on "Illumination in Factories," by Mr. D. R. Wilson,* ultimately brought the matter under general review, and in January, 1913, a Committee was appointed by the Home Secretary; this was to enquire into and report on the conditions neces-

* Included in Annual Report of the Chief Inspector, 1911, p. 239.

sary for the adequate and suitable lighting (natural and artificial) of factories and workshops, having regard to the nature of the work carried on, protection of the eyesight of workers employed, and the various forms of illumination.* Miss Squire, who had given much attention and study to defective lighting and its remedies in factories, was made a member of this Committee in November, 1920.† The bearing of this problem of lighting on safety and accident prevention as well as on health has been long in receiving the attention that it deserved from the British legislature. In 1897, I drew attention to its recognition by French, Belgian, German, and Austrian legislatures. That the workers felt an intense need of skilled attention to the question is evident from a letter of complaint in 1909 which besought an Inspector to "give a call unawares and see the black holes of workrooms we have to try and work in, with scarcely any light. . . . Please say nothing about receiving this letter, but act on its contents, and do for us what we need in the way of proper light and ventilation."

Probably the most important of the early contributions of Women Inspectors to improved sanitation in the factory lay in their insistence, year after year, on the close relation between good general ventilation, cleanliness (including freedom from dirt, dust, effluvia, and organic impurities), lighting

* Departmental (Home Office) Committee on Lighting in Factories and Workshops, 1915, Cd. 8000; 1921, Cd. 118.

† See Annual Report of the Chief Inspector for 1920, chap. ix., for a résumé by Miss Squire of the recent advances and parallel delays, in progress, in this vital matter in factories.

and temperature, and on the value of exact tests and standards in these matters. Time after time phthisis was found to be rampant in particular factories where anæmic, poorly nourished girls worked long hours, in light sedentary work, and at dainty white work, under combined defects in cleanliness, ventilation, lighting, heating. In such places, before the days when canteens and playing-fields were considered suitable adjuncts to factory life, the steady undermining of health that went on was really greater than in many a factory under special rules for dangerous processes, or supplied with good exhaust ventilation for injurious dust. In such instances the co-operation of local Medical Officers of Health under the Public Health Authorities, both directly and in their reports, was invaluable. As Dr. Niven in his Annual Report for Manchester in 1902 observed: "Unless the workshop is free from dust no mode of ventilation can be quite satisfactory. The first requisite, then, is cleansing, carried out in a proper manner. Ventilation must be considered in reference to each individual case, but cleansing is a universal requirement as to which definite rules can be laid down . . . it is imperative in the interests of health that cleansing should be by wet sweeping."

The extra need of fresh, pure air for maintenance of their efficiency at work is a marked constitutional feature in women and girls, and their sensitiveness to cold and draughts is proportionate also to the sedentary character of much of their work. The Women Inspectors were thus rapidly brought up against the interdependent problems of artificial

lighting and heating. Fine garment-making and embroidery call both for good lighting and for freedom from presence of coal-dirt and smuts in the air, whether admitted by open windows or by combustion inside the workroom. When we began our inspection, closed windows and absence of fire in the grates was the rough-and-ready way of securing "clean" air for delicate fabrics, while warmth had to be secured chiefly by using gaslight burners of the bat's-wing type, as a means of maintaining a temperature in which nimble fingers could carry on their skilled work. Later, from January 1, 1896, the unhooded gas stoves—some of the crudest type—fitted in many workshops and smaller factories in consequence of the first legal requirement in the Act of 1895 that "adequate measures shall be taken for securing and maintaining a reasonable temperature in each room in which any person is employed" constituted strong new arguments for powers to require good general ventilation. Even so dangerous a gas as carbon monoxide, produced in appreciable quantities by some of these stoves, not being an impurity "generated in the course of the manufacturing process," could not be held legally subject to the provision for exhaust ventilation.* Nor was there any legal remedy until the Act of 1901 embodied a requirement that the measures taken for securing a reasonable temperature should not interfere with the purity of the air.

A great deal of work by the Women Inspectors in support of cleanliness has directly furthered

* Factory and Workshop Act, 1878, sects. 3 and 36.

maintenance of good natural light in workplaces. Not only have they pressed for regular cleansing by wet methods of floors, but also for the same treatment of windows and skylights; and the attention of occupiers was constantly drawn to the value of such aids as reflectors, luxfer prisms, and the like, in mitigating darkness or prolonging natural light in underground workrooms. Innumerable confidential complaints from workers furthered our activity in this direction. "In all the rooms of one badly lighted factory the windows were so dirty that . . . artificial light had to be used during the day. . . . The gas with old flickering bat's-wing burners being always in use, large numbers of the girls complained of headache and weariness. This they attributed to the bad light more than to the impure air."* It was about 1903, after the amended provisions regarding temperature and ventilation had had time to work, that women began to send increasingly definite complaints: "Nearly all the workers suffer from colds . . . now the present gas fire, whenever there is a down draught, drives into the workroom poisonous carbonic acid gas."

The discomfort of low temperatures was intensified in some occupations, such as aerated water works, where floors, usually of concrete or stone, are liable to be very wet, and bottles and siphons alike cold to handle. Bottle washers got some comfort where the water was hot, but liability to soaked garments aggravated suffering from cold rooms in wet places.

Extremes of temperature in the workplace at the

* Annual Report of Chief Inspector, 1911, p. 136.

other end of the scale, rising to 100° F. or 110° F., or even higher, are specially connected as a rule with the nature of the processes, and sometimes increase the risks of dangerous and injurious industries, especially where lead is present, as in certain pottery processes. There the problem is to limit the heat without injuring the process. In other cases the heat results from the work, and can be mitigated without injuring it. In laundries, for example, as a mother once put it, young girls can get "all faded" through unregulated heat and laborious work; and sometimes sunlight streaming through inadequately shielded skylights, say, in pressing-rooms of clothing factories, or in jam factories, causes temperatures of 96° F. and numerous cases of fainting amongst the girls. Painting or white-washing of such skylights, where blinds are not practicable, was advised in mitigation of the discomfort.

It is mournful to contemplate the amount of slow injury to the human system, insidiously at work and showing its effects in disturbed physiological functions and malnutrition, sometimes with resultant desire for stimulants. This must have long handicapped not only the workers—vainly appealing for removal of half-understood defects—but also the efficiency in industry and the prosperity of manufacturers. The old British neglect of scientific control of ordinary hygiene in the workplace has to answer for much. Even when the nation was apprised of the relation of disease to dirt, in environment, including air, and lack of means for maintaining personal cleanliness—how slow-moving was

action to apply the knowledge effectively, through laws for protection of the health of the industrial workers! The relation of disease and accidental injury to darkness and to unnecessary use of defective artificial lighting, an old problem, is only beginning to come into serious consideration at the close of the period covered by this book.

Along with recent advance in these matters we have to reckon the benefits accruing from the recent rational reduction in hours, and from development of other fundamentals of welfare—before all, the means of partaking of good food in many works.

It was significant that the Women Inspectors, as a branch of the Factory Department specially charged with the duty of interpreting and responding to the needs of women workers, received throughout their service certain appeals and complaints on questions of conduct, or conditions in the factory essentially affecting morals. These appeals on matters not directly under the Factory Acts were never numerous, though markedly increasing in the last few years before the War, when women workers were growing bolder in self-expression and self-help. The relative smallness in their number was balanced by their intensity.

From about 1896 onwards, the mere possibility of the visit to any factory of a Woman Inspector coming from headquarters in Whitehall—strongly bent on sanitary reforms connected with increased cleanliness, fresh air, light in the factory, physical fitness of the worker, suitability in lavatory arrangements—had a wide and marked effect. She gave a new meaning to the technical requirements of the

law by her steady insistence on the value of responsible superintendence of working conditions. The very concentration of the Women Inspectors in a team-work that could be applied in any area or centre, or to any particular problem in any industry, tended to co-ordinate the work of the whole Department in these technical things, as well as to unify the outlook. Employers, sympathetic to advance, were helped to come into contact, sometimes at their own express wish being put in communication with each other. Undoubtedly this whole movement, linked as it was with a little united band of enthusiasts, moving up and down the very dusty ways of industrial life, did much to hasten improvement also in things affecting manners and morals.

"Why have I never had a visit from a Lady Inspector before?" was a question from an employer that indicates a sentiment expressed more and more frequently as the Women Inspectors increased in weight of experience. Nothing, however, excelled in importance the confidence engendered between the woman worker and the woman Factory Inspector through the successful steady rooting out of abuses. In 1902 a girl, who had given evidence for Miss Squire two years earlier in a prosecution for illegal employment, wrote to her of a criminal assault made on her by a fellow-workman on a dark winter morning in the factory, and she got help and advice, though not under the Factory Act. At such wide intervals as 1900, 1904, 1907, 1912, I see in our published reports records of complaints of brutal conduct by managers, foremen, overlookers, towards

young girls. Even an employer in a spinning mill was implicated in one of the earliest of these. "It seems scarcely credible that nowadays (1900) little doffers should be knocked down by grown men, violently struck on head and shoulders . . . yet there was evidence of little half-starved, undersized creatures who had suffered at the hands of a burly overlooker and a tall imposing member of the firm . . . too strong to be doubted. When tackled with such conduct and warned, neither denied the charge." Another complaint, in 1912, disclosed similar conditions. The visiting Inspector, again Miss Squire, chanced while half-screened by a pillar in a workshed, to witness an example of such brutality, when a foreman seized, shook, and flung from him a young girl. She brought this, with various serious contraventions of the Act that she found in the factory,* before the managers, and "shamed them into taking action to bring about real improvement in the conditions." Cases of drunkenness and abusive language and complaints of immorality were similarly dealt with and improvements secured. In some cases the police, investigating immorality of an employer towards workgirls, sought our aid. In other directions, employers would seek our guidance in controlling moral risks. All such occasions afforded a welcome opportunity to the Inspector for giving information

* For example, neglect to present seventeen little girls for examination as to physical fitness by the certifying surgeon, of whom five were subsequently rejected by him and sent for medical treatment; sanitary conveniences not separate for boys and girls.

to the occupier about the well-attested gain of wisely chosen, trained women's superintendence in matters of hygiene and welfare in the factory. In one noteworthy instance the discovery by Miss Martindale of some oppressive treatment of little half-timers in a great textile mill in Belfast led the active-minded manager to ask her whether he could find a trained woman to carry on, daily, in the mill such work as she had done at a single visit. The woman was found, and she did much for the health and welfare of men, women, and children there.

In 1896 it was first recorded that letters of thanks from workers for improvements effected by the Inspectors were coming in, sometimes without any clue to the writers. And an Inspector would be stopped in the street by a group of girls, who had previously complained verbally during an inspection, to say how much better things were going since "fining had been reduced"; or a railway porter lifting an official bag into the train would give a word of thanks on behalf of a sister or friend whose overtime had been reduced. Or one workgirl confiding a hardship in her workplace to another girl casually met outside, would be told to "come along to the Lady Inspector who helped me a year ago," and, investigation and prosecution following, would set in train a similar series of remedial activities.

Ireland had, as in so many other things, special ways of her own in appealing to and thanking the Inspector for aid needed and rendered: "Please . . . would you kindly see to the heating of our Room . . . the stitching department is not venti-

lated, it is terrible fusty you would never want a headache if you had to work in it . . . thanking you in anticipation. We have proved your worth before, every worker knows you are a lady." Another hopeful set of complainants, who wrote of lack of any means of heating in a draughty finishing loft, signed themselves, "Yours expectant," and the Inspector, Miss Martindale, on her arrival was greeted with: "Thank God, you've come." Or, again, another wrote thanks and pled for continuance of her watchfulness: "Thank you, mem, for coming to X. They are doing what is right since you were here if you only knew how much good you done . . . please mem be sure and watch them."*

In England the expression of such thanks was generally more impersonal, but not less grateful and confident. One letter I received stands out in my memory always, in its prompt response to investigation of a complaint of overtime by Miss Paterson. "It is no use to send an Inspector to ask the girls questions, for they depend on their living and dare not say much; but I must say that the lady sent was just the sort of friend a dressmaker requires."† Miss Tuckwell wrote in 1897, as Honorary Secretary of the Women's Trade Union League, that the confidence of the factory women was "based on the fact that their representations are received and distributed by a woman, and by women enquired into and redressed"; "Our Women Inspectorate has adapted itself exactly to English needs, and,

* Annual Report of Chief Inspector, 1912, p. 121.
† *Ibid.*, 1902, p. 153.

as a Yorkshire workgirl remarked, 'We are well suited by the Lady Inspectors.' "*

In all this part of the history of administration of the Factory Acts one sees conclusive evidence of the very great need there was of intuitive insight and extraordinary persistence in probing or tracking down ills peculiarly affecting industrial women and girls that, as a whole, were never laid bare until the women had access to a woman in authority armed with legal powers to initiate the remedies. These ills afflicting women formed in some respects a parallel to the earlier though grosser abuse of child labour at the opening of the nineteenth century, and recall the words of Mr. Cooke-Taylor:

"It is of great and increasing importance that that story be kept in memory; that it should never be suffered to become extinct; as a pitiful . . . warning against the preposterous doctrine . . . that human affairs can be entrusted to impulses of mere cupidity without shocking and degrading consequences."† It is difficult now, even for the Women Inspectors, to reconstruct in the mind the barbarous and grinding conditions that they were called to disclose and to help to transform. The woman worker was "subject to" mechanical power, and it needed a labour of love to help her to free herself.

In nothing does this appear more clearly than in the sphere of wages, touched on in the following chapter.

* "The Jeopardy of a Department," by Gertrude M. Tuckwell. Published by the Women's Trade Union League, 1897, p. 7.

† "The Modern Factory System," by Whateley Cooke-Taylor, late His Majesty's Superintending Inspector of Factories.

CHAPTER III

WOMEN'S WAGES AND THE TRUCK ACTS; THE PIECE-WORKER AND HER PAY

"Tell me what shall thy wages be?"

LONG before the beginnings of the modern factory system, and centuries before the idea of applying standard requirements for health, safety, or limitation of hours in factories and workshops had arisen, Parliament had recognised the need and right of the worker to receive full payment of the wages he had agreed to work for, in current coin of the realm—"in true and lawful money."* It also recognised his right to spend those wages as and where it best suited him.

The law relating to Truck† was consolidated quite early in the growth of the factory system by the Act of 1831. This Act, and the Act of 1887, which first brought in the very necessary aid of the Factory Inspector to enforce its provisions and strengthened the law,‡ are still in force, together with the Act of 1896, which first regulated fines

* These words are in a statute of Edward IV.

† A Franco-Scottish word meaning *barter* that appeared in a statute of George I., after the Act of Union. The Act of 1831 was "to prohibit the payment, in certain trades, of wages in goods or otherwise than in current coin of the realm."

‡ Extended at this date to Ireland also.

and various deductions from wages, making them illegal unless in pursuance of a definite agreement or "contract" with every worker affected.

In 1908 a Departmental Committee, appointed by the Home Secretary, reported on the great need, then generally recognised, for amending and consolidating these Acts, and a minority of the Committee recommended entire prohibition of fines and deductions regulated by the Act of 1896.

In the same year there was more than usual activity, with markedly successful results, on the part of the Women Inspectors in investigating and prosecuting for contraventions of the Acts. From about 1897 onwards they had gradually acquired a unique acquaintance throughout the United Kingdom with the human results of uncertain and low wages, peculiarly oppressive to women and girls, by their investigation of complaints, by long-drawn-out legal proceedings, by special enquiries into home-work, and into payments of wages in overvalued groceries and other goods instead of money. Of a packet of tea given in place of hard-earned coin, the outworker would say: "And the tea indeed it is not good, it is not worth putting water on." "A pair of thin elastic-sided boots which constituted the 'wages' paid to a worker, who, according to the practice of the country-side (Donegal, 1897), generally went barefoot, were objects of longing" to the Inspector as "articles of evidence."*

The Women Inspectors have also had carried to the High Courts of England and Ireland five out of the six appeals, on points of law under the

* Annual Report of the Chief Inspector, 1897, p. 109.

Truck Acts, taken at the instance of the Factory Department since 1896.* Facts and details that came out at their prosecutions in police and sheriff courts passed into the public press. There, and through published official reports, it became well known in Parliament and elsewhere that wages below subsistence level afflicted women in many factories, as well as in homework. Various voluntary committees pressed the matter forward, and the Inspectors' evidence, published year after year in Annual Reports, strengthened the Anti-Sweating Movement from about 1904 to 1906. Public opinion was stirred afresh by the Sweated Industries Exhibition of 1906, and eyes were opened to evils almost forgotten since the work and report of the Select Committee of the House of Lords in 1888-90.

The evidence of the Women Inspectors given to the 1908 Committee on Truck was extensive as to the evils affecting women and conclusive as to the need of amendment of the law. In the same year the Select Committee on Homework referred repeatedly to the assistance they had obtained from "so experienced and competent an observer as Miss Squire, of the Home Office."† The passing of the Trade Boards Act of 1909 followed very shortly on their Report. It provided for payment by employers of a minimum rate of wages "clear of all deductions" in certain industries specified

* Report of Committee on Truck, 1908, vol. i., appendix iv., Cd. 4442.

†. Report from the Select Committee on Homework ordered by the House of Commons to be printed July 22, 1908.

in a schedule to the Act, and in others to be brought in by Provisional Order where the "rate of wages prevailing . . . is exceptionally low"; and Trade Boards were set up for the fixing of such minimum rates. This Act provided for minimum time rates and for general minimum piece rates, and, on the whole, has secured as solid a general assent from the community as did the Elizabethan provision in earlier times for protection of the poorest labourer from starvation pay "both in times of scarcity and in times of plenty."

The Act was administered, not by the Factory Department (as was proposed in 1908 by the Select Committee on Homework), but by the Board of Trade (later by the Ministry of Labour). It thus only enters into the scope of this study because so closely linked with the pioneering work of the Women Inspectors when they really *tested* the Truck Acts and the Section in the Factory Act for securing to women pieceworkers (in non-textile industries) the protection of written "particulars" of their work and wages. It also had a striking effect in steadily sweeping away many of the deductions from low wages with which we were specially concerned. The beneficial movement was carried decisively forward by the special wages conditions administratively enforced for women during the War.

The fundamental elements in wages problems are in some ways simpler and homelier for everyone than problems of scientific hygiene in the factory. Most of us realise very well how much our freedom and happiness depend on having, in

our recompense for labour, a margin for spending, above what is just necessary to keep us going, and on being able to compute definitely from week to week what the recompense will be. We do not need technical knowledge to develop insight for that. We can all readily grasp the truth in those words of Adam Smith: "The property which every man has in his own labour, as it is the original foundation of all other property so it is the most sacred and inviolable," and "no society can surely be flourishing and happy of which the greater part of the members are poor and miserable." And thus, when the miseries of fraudulent payment in goods or of excessive and uncertain deductions from wages, or of sweated wages, are brought out, it is clear to everyone that regulation must be attempted with the least possible delay.

As regards the grosser abuses of payment in goods, the law had become generally effective for the principal wage earners in organised factory industry before 1893. For women outside the factory system, these forms of Truck were then and much later to be found in certain homework industries in directions to be considered presently. And in the least organised factory industries enforced purchase and raffling of articles "damaged" in process of manufacture, and many oppressive forms of deductions and charges on slender wages, were widespread.

Although, fortunately, laws relating to wages—that is, Truck Acts, Particulars Clause, Trade Boards Act—were and are applicable to men and women alike, it is evident that, until strengthened

by help from Inspectors of their own sex in the Factory and Trade Boards Departments, and by recent development of their own powers through leading women organisers, women have proved but poor bargainers for themselves, and weak in securing their own welfare in matters of wages. This weakness was, no doubt, closely linked with their artificial exclusion from many well-paid industries and processes suitable for them, which intensified their competition for available employment. The published reports of the Women Factory Inspectors down to 1914 remain an historical record of the depredations on their wages that the women suffered, and of the pitiful smallness of their average earnings—the details being, as viewed from the standpoint of later improvements, almost staggering. Their "property in their own labour," outside a few well-organised industries and often even in fine-looking factories was, when we began, neither "sacred" nor "inviolable," and, indeed, in many places, barely existed. Although the Women Inspectors were at work to track out and deal with contraventions in "hard cases," yet the range of area, processes, and numbers dealt with by them in factories, workshops, and among outworkers is so wide, and the figures were so carefully compared with those given by manufacturers themselves, that their reports make a decisive addition to the evidence contained in the Board of Trade Wage Census of 1886 and 1906. The wage levels for women in their chief industries, given in this census, low as they were, were undoubtedly somewhat higher than in fact, and only covered returns

from the firms responding to an invitation to disclose information in their wage books. Even if the average wage per week for women over eighteen years of age in non-textile industries was, as indicated by the wage census, about 12s. 11d.,* those of an immense number of women employed inside the factory did not rise above 7s. to 8s., out of which came deductions for disciplinary fines, charges for cotton, needles, etc., use of power, standing-room, cleaning of the factory, damage, or purchase of damaged articles, hospitals, supply of hot water for tea; so that for many young women 5s. to 6s. a week was nearer the mark. To such numerous workers information that an average of 12s. to 14s. was paid to women in their industry would have meant nothing. It was their own individual daily or weekly wage that was the reality to them. The Act of 1896 required, as already said, that a definite contract must be made by any employer with his workers before deductions could be made from wages; other terms could be specified in a notice affixed in the workplace. Among other conditions the deductions had to be fair and reasonable, the acts or omissions which entailed a deduction had to be specified in the contract, and particulars of any deduction actually imposed had to be given to the worker at the time. Even when the Inspector had severely pruned the contract, deductions for such things as gas, needles, sweeping, sick clubs, made a serious inroad; a rate of 6s. 6d.

* Compare figures given in "Labour and Capital after the War," edited by S. J. Chapman, C.B.E., iv., p. 80. London, John Murray, 1918.

would emerge as 5s. 5d., of 7s. 6d. as 6s. 5d., of 12s. as 9s. 9d. for a week's work that might legally be sixty hours.*

"Girls' wages are as a rule so pitiably low as to leave no margin," said Miss Squire in 1898, "for making good any damage to work entrusted to them, while the rapidity necessary in order to reach the standard required of workers—paid by the quantity turned out—increases the risk of damage."

In that year a letter reached me from the Leader of a Factory Girls' Club in London about one of its members, employed in decorated sheet metal work, who "looked thoroughly miserable and overworked." The girl had been set to work, at 8s. a week, on a heavy "grooving" machine in place of a man paid 28s. a week. A visit from the Inspectors was desired, and the girl said they would find "plenty things to find fault with." Although attention was promptly and closely applied to these other things, I had to explain to the Club Leader that the Factory Inspector was not concerned with even the slenderest wages, except in so far as touched by the Truck Acts, unless the pieceworkers should desire to submit a claim for extension to them of the Particulars Clause in the Factory Act.

In the same year an instance of deductions for short quantity from girls soldering tins containing perishable goods, being engaged, not on piecework, but on a fixed weekly wage, again illustrates both the smallness of wages and the subjection to heavy pressure. Here the girls rarely (some never) received full wage, 1d. being deducted for every

* Annual Report of Chief Inspector, 1898, p. 185.

ten trays (twenty-four tins on each) short of the total required daily, which was 190 trays containing 4,560 tins. The girls complained that this total exceeded what their best efforts could produce. "It is slavery. We do not dawdle. We are all for scrambling for fear of losing our money." Miss Squire examined the books for eleven workers during five weeks, and none reached the total required, although two once came within two trays of it. Rewards were given for care and good work and were set off against "short quantity." Thus from a wage of 8s. 9d., 300 trays being declared short, 2s. 6d. was deducted, and 1s. added for good work, resulting in a net wage of 7s. 3d. The Inspector found in another factory under the same company a woman whose wages were raised for good work, who ordinarily sealed 120 to 140 trays daily, and could do 170 trays at a push. Thus the deductions in the first factory were manifestly unfair and they were refunded after the investigation. The manager subsequently informed the Inspector that there was no falling off in number of tins sealed by the girls.* In a biscuit factory labellers, putting labels on four sides and the top of a tin, were paid at the rate of 1d. for twelve tins; for any one label damaged, 1d. was deducted, so that twelve tins would then be labelled for nothing.†

The Women Inspectors were driven to realise by such experiences that not merely was starvation pay for women and girls prevalent in many instances, but that the whole outlook of many

* Annual Report of Chief Inspector, 1897, p. 112.
† *Ibid.*, 1901, p. 190.

employers on their standard and maximum wages for women was darkened, and these employers had almost uncontrolled power to fix and alter rates for unorganised workers. As late as the middle of 1914 Miss Whitworth (Mrs. Drury), taking evidence for a prosecution, found that a piece-worker, without the required written particulars, was actually paid for some work in the week of enquiry, without notice, less than she was paid in the previous week for the same work. The foreman's explanation was: "What can one do, when a girl is earning as much as 15s. a week, but lower the piece rate."* This was a not unusual attitude throughout our experience up to the war period. The fact of its existence and the consequences on the output of the workgirl—faced with the alternatives of earning the same sum whether on a higher or a lower piece rate, and naturally choosing the former—may be well seen in Mr. R. H. Tawney's "Minimum Rates in the Tailoring Trade."†

Of wholesale clothing factories in Colchester, in 1908, a local leading manufacturer told an Inspector that he thought 7s. to 8s. would be the average wage of the girls employed, and her "own observations confirmed this. Board and lodging cost 7s. a week at the lowest, so it is obviously impossible for a girl to live unless she is at home."‡ It is noteworthy how often this average appeared to rule in various parts of the country, as one turns over many Annual Reports.

* *Ibid.*, 1914, p. 49.
† *Op. cit.* (1915, G. Bell and Sons), p. 127.
‡ Annual Report of Chief Inspector, 1908, p. 155.

The remarkable thing about this low and limited view of the value of a woman's work, which ruled so generally as seriously to depress her own estimate of its value, was that a sudden alteration in the valuation occurred immediately there was any failure in punctuality of attendance, or quantity and quality of output. And yet, sometimes, outside public opinion, as reflected in the decision of a police court magistrate or a sheriff, supported the two apparently incompatible estimates.

In a case taken into court in South London, where the contract for deductions for time lost rendered the worker liable to a fine of 1d. a minute lost, the information was dismissed on the ground that the contract was not in general unfairly enforced, although it was shown that one worker earning 6s. a week was fined 5d. for five minutes lost and another 4d. for four minutes lost. While the girls were at work the service was valued at 1½d. an hour, in a week of sixty hours' work.* In a South London factory, where fining was at the rate of 1d. for any time lost up to five minutes, and 2d. for more than five minutes, 276 girls out of 500 were fined sums from 4d. to 8d., and the total amount collected by the firm in this way was £156 in a year. Incidentally punctuality was not secured here by docking the low and hardly earned wages of the girls. In many cases the attention drawn to the matter by Inspectors induced employers to refund deductions that should never have been made. Heads of firms often gave far too little personal care and attention to safeguarding their

* Annual Report of Chief Inspector, 1911, p. 161.

own employees from injustice.* In numerous instances where, after careful investigation in a factory by the Inspector of the whole effects of the fining system, the matter was once fully brought to the knowledge of the head of a firm, voluntary abolition of the system followed. Where it was abandoned in favour of better methods of discipline, return to the system was unknown. The gain in efficiency of management was well attested by such employers in their evidence to the Committee on Truck in 1908.†

A contrast appeared frequently between the estimate of value put into an article by labour expended on it, and of the worker's share in responsibility for loss occasioned by any accidental slip of the fast-moving fingers. In a rubber tyre factory, for example, where the outer case of the rubber tyre was trimmed—*i.e.*, cut neatly along the edges—by girls, at the rate of 1¼d. a dozen cases, a fine of 1d. was imposed for each case damaged by the edge being unevenly cut or snipped. The loss to the employer was indeed reckoned as 2s. 6d.; the loss to the worker, although only 1d., equalled four-fifths of what she could earn in an hour's work.‡ In a safety-pin factory in the West of England, where only good work was paid for and some waste unavoidable—material being " weighed out " in lots of 100 gross or 50 gross, and weighed

* *Ibid.*, 1912, p. 157.

† Report of the Committee on Truck, 1908, Cd. 4442. QQ. 7716-8, 8192, 8204, 8234, 17892, etc., and Report, vol. i., p. 25.

‡ Annual Report of Chief Inspector, 1898, p. 185.

again when brought in—some exceptionally bad deductions were found. A girl who had to cap 50 gross of pins for 1s. 3d. was told when she brought the lot in that she was ¾ pound short, and 2s. 3½d. was deducted from her weekly wage of 5s. 7d. A married woman bringing in 84 gross of good pins out of 100 gross booked to her, was charged 2s. for 21 pounds short in the metal, and instead of receiving 1s. 11½d. for the 84 gross pins, admittedly well capped, received her pay envelope empty—with a note on it that she owed ½d. Here the firm, aroused by the miserable conditions brought to light by the Inspector, voluntarily returned all deductions, exceeding 5 per cent. off any weekly wage to the workers for the whole year, and arranged for piecework books with careful entries and for regular "check-weighing" by the workers.

The number of instances is astounding where, by the aid of the records required by the Truck Act of 1896, Inspectors were able to track out preposterous, long-standing "debts" of workgirls to their employers for "damages" which they could not test or verify themselves, in shirt and collar and other clothing trades, in pen factories, and other small metal works; the burden of the system can only be grasped by a careful study of details in numerous Annual Reports. The difficulties of successful prosecutions in many bad cases are touched on in Chapter VI. on legal work. "There were cases in which the worker had remained in debt for as long as eighteen months on a single batch of collars machined, gradually paying off by

such instalments as her weekly wage of 7s. to 10s. would bear."*

In an Irish linen-weaving factory that I visited with Miss Martindale in 1911 in the course of long negotiations with the Manufacturers' Association, carried on in the hope of securing voluntary improvements in harsh contracts regarding damaged work, we found that 65·76 per cent. of the weavers were fined an average of 8¾d. in one recent week, and 60·5 per cent., an average of 7½d., in another week, six months earlier. The highest gross average wage was 7s. 2¾d., and the average net wage, including a so-called time bonus, was 5s. 8½d. The mill was making little or no profit, and, as I observed at the time, I "never had so strong an illustration of the truth that thriving manufacture cannot be built up on the labour of depressed and half-starved workers." In spite of warning, the percentage of workers fined there rose yet higher, and the firm was told that unless there was immediate reform proceedings must follow. Here and elsewhere I pressed for the institution of method and application of skill in training the workers, and in this case it was effectually established with results most satisfactory to the management, while the number of workers fined fell to 6·9 per cent. In another weaving shed, where 33 per cent. were fined weekly for cloth faults, after an Inspector's visit all fines were abolished "as an experiment." The manager in due course wrote that it was an unqualified success, but that he did not wish his competitors to know,

* Annual Report of Chief Inspector, 1902, p. 190.

as it gave him an advantage in getting good weavers.*

A great evil, particularly in connection with clothing factories, developed out of charges for damaged work, in "raffling" in order to escape the burden of practically enforced purchase by the workers of garments that they were alleged to have damaged. Even in 1898 factories were found where this practice had been reduced to a regular system. In one factory every worker was required or expected to pay 1d. a week to the foreman towards a fund for paying back to the employee the amount deducted from her wages for damaged work, receiving in return a ticket for the raffle by which damaged articles were disposed of week by week. Three successful prosecutions, taken by Miss Squire in 1905, did something to check the growth of this practice in Leeds. In each case the magistrate severely censured the defendants.† In 1906 it was found to be extensively prevalent in Manchester "making-up" factories. "Leaving aside," said Miss Paterson, ". . . the effect on character of gambling even to so slight an extent, I think it tends to make workers careless in their work; to make foremen and employers careless about training good workers, and indifferent to fairness when they assess damage."‡ Although compulsory purchase by the worker of damaged work, illegal as it was, decreased, it was far more difficult to repress the insidious practice of "giving"

* Annual Report of Chief Inspector, 1911, p. 162; and 1914, p. 50.

† *Ibid.*, 1905, p. 328. ‡ *Ibid.*, 1906, p. 239.

the worker or "allowing her" to take damaged work, for which she had a deduction made from her wages. The better employers agreed with the Inspector in prohibiting anything of the kind in their works.

This old evil, of compulsory purchase by the worker of damaged products of her industry, the damage being due, not only to lack of care, but sometimes to accident, sometimes to defective material or implements, sometimes to overpressure or defective training of the worker, appeared in even the highly organised and relatively well-paid cotton trade, which had at its own instance been exempted from the scope of the Truck Act of 1896. Some girls of fourteen and sixteen years left a cotton factory in 1901 owing to heavy fines for faults in the cloth. On claiming arrears of wages due, they were each shown a piece of cloth and told they must take the damaged pieces in lieu of wages. ". . . Finding they could make no other terms, they said they would take time to consider," and meanwhile wrote to the Inspector, Miss Squire. She accompanied them in the following week to the factory office, "and the wages were paid over in coin, the employer finding that the Truck Act, 1831, was not to be lightly set aside."*

Deductions for motive power, used in the manufacturing process, were often found in our earlier years of inspection, but they had already begun to die out, and, I think, have long since done so generally. They were mainly a survival from the time of transition from handicraft to power-driven

* *Ibid.*, 1901, p. 191.

industry, and sometimes reflected the hardness of those days—as when they covered not only cost of fuel and repairs, but wages also of the man who attended the engine. I made a calculation in the case of some Lancashire clothing factories in 1897-98 that payment by the worker of 1d. in the 1s. earned, or 1s. weekly if wages rose above 9s., brought in enough to run the whole power at the workers' expense, ownership of the engine remaining with the occupier. Charges or deductions for cleaning the factory, or parts of it, such as lavatories, were also a survival from other days when the worker worked in his own domestic workshop; severe scrutiny by the Inspector of many wage contracts, and of local practices that were unrecorded in any formal notice, was necessary to free the worker from the burden of carrying the occupier's legal responsibility for keeping his factory in a cleanly condition. Levies of 1d. a week on every worker in a large factory would sometimes produce more than the wage of a good charwoman in places where there was not much evidence of her activity. Even in 1901 the prosecution of a firm for employing women in the dinner hour gave publicity, during the hearing, to the details of how women and girls supplied gratis, the labour, cloths, buckets, etc., necessary to enable the occupiers of a world-famed textile factory to keep it in the cleanly state required by the Acts. The conviction did much to "shift the burden on to the right shoulders."*

The odd topsy-turvy way in which law and administration reacted in the difficult work of

* Annual Report of Chief Inspector, 1901, p. 190.

applying the Truck Act was seen by Miss Martindale in a procession of workers who paraded the streets of Belfast in 1911 carrying boards on which stood in large letters the words: "Down with the Truck Acts." This followed our long negotiations with the Association of Manufacturers (already referred to) in an endeavour to secure milder contracts regarding deductions for damage. The meagre results had been embodied, with other rules over which we had no control, in a notice (drafted by the lawyers to the Association), a copy of which was handed to each worker. The notices were headed by the words: "The Truck Act, 1896, requires that a copy of the following terms and conditions should be handed to every worker." The "other rules" included such conditions as instant dismissal of a worker when, in the opinion of the employer, manager, or overlooker, she had been guilty of certain acts or defaults, and discharge of workers in any department without notice or compensation if any of the workers in the factory strike or decline to work. This blending of incompatible terms could not be prevented by legal process without amendment of the Act.

Up to the time of the passing of the Truck Act, 1887, and even later, a common opinion held that deductions from wages in respect of fines were rendered illegal by the Act of 1831, through its provision that the entire wages were to be paid in coin. The important decision in *Redgrave* v. *Kelly* (1889), however, established a different conclusion, and left it so that the question of the reasonableness of fines could not be raised under that Act. It was

chiefly against uncertainty and unreasonableness in such fines that the Act of 1896 was aimed. Among the reactions from the very considerable, though incomplete, degree of control introduced by this Act came the development, especially in Irish textile factories, of a so-called " bonus " system, the real meaning of which was in many instances a desire to " keep clear " of that Act. It appeared in amounts varying from 5 to 20 per cent. of the wage in many and subtle forms; for time-keeping, for output and equality of piecework, and for amount of wages earned in the week. Although the bonus seldom seemed to raise the average wage above the local level, it was treated by the employer as a kind of gift, over and above wages, and the whole or part was liable to be withheld, in addition to imposing any specific fine mentioned in the contract or a deduction for time lost. In a case carried from Petty Sessions to the High Court in Ireland, *Deane* v. *Wilson*, a weaver lost 2s. 4d. out of a weekly wage of 10s. for a single small unpunctuality. Arriving thus at the mill a few minutes late, she was locked out for a quarter of the day and forfeited her " bonus " of 2s. in addition to the quarter time lost, reckoned as 4d. The High Court confirmed the decision of the magistrates to dismiss the summons, on the ground that the 2s. bonus could not be computed as wages, and that therefore no fine was inflicted.

The Committee on Truck, 1908, decided that the bonus system was open to grave abuse, and on the evidence placed before them believed that it was abused. They made certain recommendations for

its control through empowering a court "after considering all the circumstances of the case to decide whether the bonus is used by the employer as a means of evading the requirements of the statute, and, in the event of deciding that it is so used, to convict the employer."* I confess that it appears to me that if such a clause had stood in the Act it would not have altered the decision in *Deane* v. *Wilson*. Magistrates and Judges alike arrived at the conclusion that the Truck Act did not provide a remedy for a reduction by 2s. 4d. of a gross payment of 10s. for a week's skilled work (which 10s. was regularly given to the wage earner if no unpunctuality occurred). The reduction left the wage earner with 7s. 8d. net for a week in which she only lost a few minutes by her own lateness. The recommendation of the Minority Report of the Truck Committee "that the bonus system should be prohibited by law" would hardly solve the difficulty. Extra rewards to workers for good work could never be effectually prohibited by law. The real problem is to assure to the worker a secure, net minimum wage, and to defeat evasion by unreasonable or unjust employers.†

The charges upon wages above considered have been taken first—although not the earliest form of Truck—because they were characteristic of the factory system and specially harassing to large numbers of women in the period from 1893 to 1914, before great changes were brought by the War.

* Report of the Committee on Truck, 1908, vol. i., pp. 28, 89.

† Annual Report of Chief Inspector, 1897, p. 110; 1906, p. 240; 1908, p. 160.

Payment in "unprofitable wares" instead of in "lawful money" mainly troubled unorganised factory operatives during the transition from handicraft industry to mass production. Truck—that is, in its original sense—survived in our official experience, and called for our intensified enquiry and action among outworkers in rural districts: in Cornwall and Somerset, over wide areas in Ireland, and among knitters in Shetland. From these directions complaints flowed in upon the Women Inspectors, keeping them absorbed for many months in activities that made them, for the time, almost anything but Factory Inspectors. They led us into almost incredible experiences* until eventually various legal decisions made it plain that any outworker who was not under an express contract personally to execute the manual work, however poor or however clearly in need of protection, was outside the Truck Acts.

Two ancient forms of oppressive "agreement . . . understanding . . . or arrangement . . . direct or indirect" prohibited by law,† continued, however, in our time to trouble ill-organised factory workers, irregular charges for rent, and compulsory expenditure of wages at an employer's shop.

"The people say it was a charity for you to stop the checks, but it would be a greater charity if you would stop the rents being kept off the workers." "If the Inspector would look after shopkeepers giving out work and making the workers take goods instead of money, I think she would be doing a service to the poor." Both these complaints have

* See below, Chapter VI. † Truck Act, 1831, sect. 25.

the vivid, Irish ring, but they expressed the sore needs of many a worker, and not only in Great Britain and Ireland. As regards deductions for rent, without a shadow of a legal right, no reported instance is worse than that in a lucifer match factory in England in 1898, followed by prosecution and fine, where, in absence of any contract, the employer was taking nearly the whole earnings of a half-starved young girl worker for accumulated and unrecorded rent, unpaid by her father during a long epidemic of smallpox.* Another instance nearly as bad was found in a factory in a great textile district where, without rent-book or any form of contract (which in any case could not have been legalised), any wife or daughter engaged on piecework was liable to receive her earnings reduced by quite undefined amounts, said to be rent due from husband or father. The mere fact that the mill was sometimes "standing" added to the uncertainty of the position; in one case successfully taken into court, the employer's ledger showed 17s. 1½d. deducted for rent in six weeks for a cottage rented at 2s. a week.† The Irish complainant (living in a house owned by his employer) was, however, concerned far more with insecurity of tenure and with the feature that "if you get dismissed out of your employment they won't give you any money (wages) till the house is empty." Uncertainty about the poorest roof over his head, being his home, was to the Irish peasant yet worse than insecurity of employment.

* Annual Report of Chief Inspector, 1898, p. 182.

† *Ibid.*, 1902, p. 191.

Miss Martindale sometimes found dressmakers employed in Irish country towns who "lived-in," receiving their wages only once a year, who were obliged to obtain articles on credit from their employers, getting seriously in debt to them. She also found hand-spinners and weavers in the tweed industry paid in exorbitantly priced draperies and groceries; a complainant, telling how a girl's wages were pledged by her father to a rich shopkeeper for five years for the paying-off of his debts, described the girl as "sold" to her employer. The remark made to Miss Martindale by a man who had very special opportunities of knowing the poorer country districts of Ireland, that "the people are born in debt, die in debt, and live in bondage," struck her in the year 1907 as "undoubtedly only too true."*

In few places could the framework of bondage be more complete than in a certain "townland," where the owner of the principal shop and public-house was also the owner of the flax-fields and flax scutch mill, and employer of many of the inhabitants. The women working for wages in the mill seldom received coin; one girl, whose father and sister were dependent on the same employer, received none during a whole winter. Dealing at the shop was practically a condition of employment.† A successful prosecution in 1907, upheld on appeal against conviction to Quarter Sessions, brought in many communications of similar cases to Miss Martindale, as did the well-known earlier prosecution by Miss Deane at Ardara in 1898, and several more

* Annual Report of Chief Inspector, 1907, p. 200.

† *Ibid.*, 1907, p. 200.

by Miss Squire in Dungloe and neighbouring districts, which led in 1900 to her hard-fought appeals to the High Court, touched on in Chapter VI. These ladies were indeed all the "petticoated Inspectors" of whom a well-known Irish Q.C. declared at the hearing of an appeal in June, 1900, that there was "an army squatted around Dungloe, watching every little industry and striving to throttle them."*

Many of the difficulties that the Inspectors had to encounter in remote country districts, in their endeavour to scotch or root out the habit of paying in kind or in tickets usable instead of coin at a particular shop, were not of legal interpretation. They were largely of local circumstances. A fortnight's residence in 1899 in a lovely district of county Donegal enabled me, beyond my expectations, to gauge the character of these practices. The open friendliness shown by the peasant woman and car-drivers to an English visitor showed me some of the essential factors of the situation. There was a manifest sense of security among the law-breakers, on the alert to conceal all traces of their methods of payment since the £44 penalty secured against a shopkeeping middlewoman by Miss Deane in 1898. In their shops, their inns, their ownership of cars, they represented the wealth and carrying power of the local community; in their connections through marriage with the priests' and magistrates' families, and sometimes even their position as magistrates, they represented the order of the community. It was possible for me to ascertain, beyond doubt, that not only outworkers, but also masons and

* The *Donegal Vindicator*, June 29, 1900.

roadworkers, were being paid for their work mainly (and sometimes wholly) in goods estimated above their real value; it was a long work of patient skill to establish particular cases in court, and to Miss Squire I left this part of our task. I could see carts laden with yarn and groceries that drove out for miles round the country and that brought back knitted hose; the difficulty was to be on a spot out in the country, or in a shop, at the exact moment to see the transactions. "To be an eye-witness," said Miss Squire, "of such payment is almost impossible, for that it is illegal is well known; and immediately a stranger enters a shop all transactions cease. Baffled frequently, I succeeded on one occasion, by a carefully-planned stratagem . . . and saw the socks handed over the counter, yarn for fresh socks given out, and packets of tea and sugar given in payment. Except in this one case I had, in undertaking prosecutions, to rely entirely upon the workers, and even those who beforehand appeared most staunch managed to evade service of summons, disappeared from their homes in a wonderful manner, and were with difficulty brought to the court. Once there and put on oath, the truth is told and conviction of the employers followed in each case, the maximum penalty being obtained in one case and £5 in each of the others. . . . The immediate effect of the proceedings is that money is handed now to workers by the agents, but a close watch will have to be kept lest . . . the practice is continued in another and more hidden form."* This was a prophetic utterance, as in-

* Annual Report of Chief Inspector, 1899, pp. 275-7.

stances of struggles in later legal proceedings showed, especially in two distinct appeals, *Squire* v. *Sweeney* in 1900.* In many ways, by letter and by word and gesture, the grateful women showed the gallant Inspectors, Miss Squire and her successor, Miss Martindale, how highly their adventurous efforts were valued. At this time it came out clearly that some local country agents of manufacturers of the big centres suffered from miserably low commissions. One told Miss Squire that he had no commission at all, that he had ceased to pay in goods since her prosecution showed him it was illegal, and he asked her if she could help him to find a commission-paying employer. Special care was taken to bring home to the head firms in the North and West of Ireland the grave responsibility they bore in this matter.

In the following year, not only in Ireland but also in Cornwall, amongst guernsey knitters, and in Somerset amongst kid-glove makers, Miss Squire carried forward this endeavour to secure respect for the right of the worker to "free control of her own earnings unhampered by any condition as to where and how they should be spent."

"Only by a daily intercourse with cottagers in remote villages and the fishing folk of little seaside towns . . . can the real nature of their business transactions be fathomed. The information so obtained and pieced together disclosed a state of such widespread defiance of the law and contempt of the rights of the wage earner as it seems incredible could exist in England at the present time." In

* *Ibid.*, 1900, pp. 29-30.

the same year the Superintending Inspector for the Northern Division noted that there existed "a considerable amount of the old system of Truck," in the Shetland shawl, the Harris tweeds, and the fishing industries of Scotland. He thought it hardly "remediable under the Acts by the Inspectorate." The features he indicated were just those against which Miss Squire's carefully devised campaign was directed in Ireland and South-West England. Unquestionably, new and unconventional methods of exploration of the trouble had to be tried. The Cornish women excelled in their knitting of yachtsmen's guernseys for which the nominal payment was 2s. 6d. to 3s. 6d. each, but the payment was in drapery goods from the employer's shop "at whatever price and of whatever quality the employer chooses to supply"; a poor cripple woman was found in great distress with a man's coat on her hands, when she sorely needed money for her rent. In Somersetshire villages the kid-glove makers were being paid in goods from the grocery shop of an agent who fetched the work from factories, distributed it to the cottages, collected it again, and returned it to the factories. The ten cases successfully prosecuted against five drapers and grocers, who were contractors in these counties, had an immediate good effect that lasted for some time, and some manufacturers were moved to open a depôt in Yeovil where they gave out the work and paid the outworkers in coin through their own clerk.* A recrudescence of the system was found

* Annual Report of Chief Inspector, 1900, pp. 352, 359, 404.

by Miss Slocock in 1907 in Somersetshire after the English High Court decision in *Squire* v. *Midland Lace Company*. This, like the Irish decision in *Squire* v. *Sweeney*, practically withdrew the protection of the Truck Acts, 1831 to 1887, from the English outworker.*

These Acts have awaited amendment all these years from 1908 to 1921, and meantime the scope of wages problems for women has widened and changed, in Great Britain at least. The War went far towards establishing for women a legal claim to a reasonable minimum wage; first, temporarily, when they were employed as substitutes in great organised men's engineering industries, and then through Trade Boards gradually set up in trades where no adequate machinery of organisation existed for the effective regulation of wages. Women's own great industrial services to the nation during the War, fostered and encouraged by specialised training, of course altered the outlook fundamentally. It was no longer a favour conferred on them merely to employ them; their work and their special aptitudes and skill were seen in a new light as a service to the community.

Yet even before these new motives came in sight, things had not stood still, for the Factory Act of 1895 had made secure the claim of the pieceworker to a definite contract as to her prospective earnings on any given piece of work. That Act directly extended to all pieceworkers in textile trades the right to *written* particulars of work and wages, in a section† which was declared by Mr. Birtwistle—

* *Ibid.*, 1907, p. 196. † Factory Act, 1895, sect. 40.

first Inspector of Textile Particulars—to be "without doubt the most popular section of any Act of Parliament ever passed in the interest of labour."* The strong organisation of the textile trades, especially the Lancashire cotton trade, had secured the beginnings of this protection to some textile pieceworkers in the Act of 1891.† It was suggested possibly by a similar provision for handicraft silk weavers in an Act of 1845.

It was so immediately successful in setting these workers free from the torment of insecurity in calculating prospective earnings on intricate piece rates, liable to frequent alterations, that other pieceworkers soon called for its aid. This was provided for by the power taken in 1895 to apply the benefit of the provision by Order of the Secretary of State "to any class of non-textile factories or to any class of workshops . . . subject to such modifications as may in his opinion be necessary for adapting those provisions to the circumstances of the case."‡

This just and simple measure, really indispensable for intricate piecework in mass production, was valuable, not only for collective bargaining between employers and employed, but also for enabling individual workers to understand and discuss the basis of piecework earnings. It was happily applied further, by the Act of 1901, to outworkers on prescribed lists kept by the occupier of a factory or workshop and by contractors.§

* Annual Report of Chief Inspector, 1896, p. 74.
† Act of 1891, sect. 24. ‡ *Ibid.*, 1895, sect. 40 (6).
§ *Ibid.*, 1901, sects. 114 and 116.

With the aid of many confidential complaints from women workers, the Women Inspectors were enabled to make a long series of effective investigations in many non-textile industries as to the inability of pieceworkers to calculate what their earnings would be at any given piece of work, and as to their consequent bitter feeling of grievance in the matter. In 1896 Miss Deane reported to the Home Office on the need for application of the clause to workers in blouse, apron, and handkerchief trades. I reported similarly in that year on the workers' desire for, and great need of, this provision in the wholesale clothing trade in the North of England, and I completed this enquiry for the remainder of the great centres of the industry in England and Scotland in 1897-98. It was at once found that the practice of giving particulars to pieceworkers was already in existence in fair-dealing factories, and that the best manufacturers held that "the only business-like system is to have a clear contract with the workers, such contract to hold good until the question of a new one has been fully considered and threshed out." In 1898 I reported that the general need of outworkers who then stood outside the section for the protection afforded by the section was even greater than the need of the factory worker.* The needs of pieceworkers in pen-making, hand fustian cutting, underclothing, shirt and collar industries were investigated and reported on in quick succession chiefly by Miss Squire, and in 1899 our first cases under an Order for written particulars were successfully taken into

* Annual Report of the Chief Inspector, 1898, p. 182.

court by her. This advertisement of the possibility of applying a remedy to one of their greatest handicaps and grievances—lack of power to calculate earnings—brought a decided increase in complaints about wages from women and girls.

The 1900 Order for particulars to pieceworkers in the pen-making trade—where long and intricate investigation into the conditions of calculating and paying wages had been necessary in this industry of many minute, successive hand-tool operations*—brought strikingly good results in a remarkably short time. The results were not only material in wages to the worker, but, still more, moral in engendering confidence between workers and employers. In 1898 there was much lack of confidence, workers asserting that their "lots" of pens were frequently larger than the nominal amount, and employers were more or less resentful of investigation. In March, 1901, Miss Squire reported that the occupiers of the twelve pen factories—all situated in Birmingham—had set to work in a "highly commendable way" to supply the prescribed particulars. I doubt if any change in methods of stating and fulfilling wage contracts was ever more quietly and rapidly effected. The employers seemed to understand thoroughly the spirit of the Order, and they expressly recognised that Inspectors, manufacturers, and workers had to work out the details of the new requirement together in a harmonious way. Here, and in various other trades, the complexity and mass of detail that had to be

* *E.g.*, cutting, piercing, marking, raising, grinding, bending, polishing, etc.

mastered in developing the various Orders for piecework particulars led to continual interchange of information and help between the District Inspectors and the floating staff of Women Inspectors. The work done then and later by the whole Factory Department must certainly have smoothed the way for introduction of Trade Board minimum wage scales. The Orders for locks, latches, and keys, cables, chains, and cart gear, of 1902, specially operated in this direction.

In some industries, and strangely in wholesale fustian clothing factories situated in textile districts where the idea of written particulars had first prevailed, there was much patient work to be done by the Inspectorate in overcoming a stubborn adherence to defective methods of giving particulars, such as chalk marks on garments, use of symbols, and their refusal even to give particulars at all.

Early in 1903 came the first and very important extension of this protection to outworkers in the wholesale tailoring trade. Their need could not be expressed in the same clear, organised way as by the factory workers. It was none the less surely to be discovered by research among them, as Miss Squire found when she investigated, directly or through visits to firms, the needs of over 6,000 outworkers. Her account of the variety in systems of giving out work in the four great centres—Leeds, London, Colchester, Bristol—and the risks of the bag-woman or carrier system in the last two districts, must be read to acquire an adequate idea of the needs of the women:

"The bag-woman or carrier system is open to much abuse, especially where these are really contractors receiving the outwork price themselves and giving what proportion they think fit to those to whom they pass on the work. Sometimes they keep the grocery shop of the village, and if they are sharp enough not actually to infringe the letter of the Truck Act, sail very near the wind and obtain an injurious control over their customers, dependent as these are upon them for both work and grocery. The prices paid to outworkers for either making or finishing are incredibly low at the best; at the worst, the 'slop clothing' rate, they are cruel. With all the sad experience one has gained in many trades of the amount of work a woman will do for a penny, one still marvels how anyone, however poor, can be found to accept the rate given for some classes of work, as, for example, elevenpence a dozen for finishing (that is, all but the stitching of the seams) men's trousers. When the rate of wages is so low, it is of great moment to the worker to know exactly what the price is; she wants to be absolutely sure that she has not been misled by some symbol into putting 'A' quality work, which takes more time, into a 'B' quality garment, for which she will receive a halfpenny less, or to run the risk of being told when she takes the work back to the factory that she was mistaken if she thought the price would be eightpence, as it had been lowered to sixpence.

"That there is a real need for the outworker to have . . . the written statement of the price the employer contracts to pay was abundantly proved. In the absence of such written particulars the home-worker is, at best, uncertain as to the price she will receive, and is at times in complete ignorance, so that the door is open for fraud on the part of 'passer,' or carrier, or messenger."*

* Annual Report, 1902, p. 189.

The need of written particulars for outworkers was voluntarily recognised by some employers, but not being enforceable had been often fitfully and carelessly carried out by their agents. It was pre-eminently a case where law should step in to bring up general practice to the level admitted by public opinion to be the least that was due from employer to employed.

At the end of 1903 the Order for particulars to pieceworkers in the shirt, collar, linen underwear, corset, and other wearing apparel trades widely extended this safeguard to cover unorganised women—to their immense satisfaction. "Mrs. A., employed in a chiffon and straw hat workshop, informed the Inspector how pleased she had been to read in the political news of *Lloyd's* about the new Order. Formerly she never knew until Saturday night when her job was done, what she would receive for it. . . . Miss D., belt and tie maker, . . . recently did fifty dozen, expecting 2d. more a dozen than she received."*

The work of enquiry, followed by extension of the principle of supplying written particulars to pieceworkers, went on apace. Seventeen or more trades were added in 1907 by composite Orders, and more in later years. Every effort was made to give administrative effect to all these Orders as fast as possible. The Inspectors acquired, as it were automatically, a wide and detailed acquaintance with prevalent wage rates, and were again and again struck by the tendency of employers to lower rates "directly girls get quick and earn too much." "It appears to be useless to point out that this is

* Annual Report of Chief Inspector, 1904, p. 279.

a very short-sighted policy, and that all incentive to quick, good work is crushed out."*

The time was evidently getting ripe for application of the principle of minimum wage regulation.

And yet a word may here be added on the valuable help, in ratio of work to wages, that sometimes could be brought, through the Factory Act and the Factory Inspector, to a most helpless class of workers, those in low-paid industries who were practically compelled to take work home at the close of the legal day in the factory in order to keep body and soul together. A striking example of an old-standing breach of Section 31 of the Factory Act of 1901 (restricting employment inside and outside the factory or workshop on the same day), with a sinister effect on the wages of the girls, was brought to light by Miss Escreet in Birmingham in 1913:

"Workers in the warehouses of a pen factory had been regularly taking home cards to thread with elastic for the reception of pens, compasses, india-rubber, etc. The workers, who mostly lived some way from the factory, arrived at their homes about 7.15 p.m., and in nearly every case worked steadily for three nights in the week for three hours or more. Many of the girls with large quantities of cards to do received help from their relations; even where this was given, their leisure was encroached on to the extent of one and a half to two hours, and where it was lacking entirely, work sometimes went on till midnight, or spread to four or five evenings in the week. Ample evidence was at hand to explain the continuance of this 'voluntary work': the system had been long virtually used

* Miss Slocock in Annual Report, 1907, p. 193.

to economise on the wages bill, for 'cards' were given out and their quantity increased at regular intervals, when girls would normally be receiving a rise. That the economy was a successful one may be seen from the fact that the average weekly warehouse wage of six adult workers, taken at random, was 10s. 1d., which they increased to an average of 13s. 5½d. by doing 'cards.' This system enabled the employer to economise in his insurance contributions as well as in wages, for, without the card-money, he would have been liable for an increased contribution. The girls were shrewd enough to appreciate the unfairness of the system, and welcomed its abolition, in spite of the fact that their net wages have dropped. An increase has been given at the factory, but not to the extent of the weekly cards. Nevertheless, I was told in one case by the sister of a worker that they had had 'the happiest week for twelve years.' And a grateful Jewish mother wished me 'a long life, and God bless you' over and over again."

CHAPTER IV

DANGEROUS AND INJURIOUS PROCESSES; ACCIDENTS AND SAFETY

"'Tis a sordid profit that's accompanied with the destruction of health."—B. RAMAZZINI, 1678.

LET us turn now from general conditions affecting women and girls in factory life to special dangers due to "any manufacture, machinery, plant, process, or description of manual labour."* Here the aid given by Women Inspectors, though extensive and indispensable, has hitherto been ancillary rather than primary in character. They have not before 1921 been brought into the Factory Department expressly in the capacity of medical, engineering, or chemical experts. And yet their early research into many imperfectly explored causes of injury to health and safety of women and young workers was so steadfast, and their evidence in Annual Reports so freely read and quoted in Parliament and the Press, that they stirred public opinion to a new outlook on women's needs in these matters. As time went on the Department was able to draw in an increasing number of women candidates with good degrees in science, and with considerable experience in research or in work of an administrative character.

* Factory and Workshop Act, 1901, sect. 79.

The steady pooling of knowledge and experience that went on in the Women's Branch yielded good fruit.

The Women Inspectors were immediately called on by the Chief Inspector of 1893 to 1895 to share both in enforcing new " special rules " for dangerous and injurious processes,* and in conducting enquiries with a view to strengthening these rules. They came into the service practically at the beginning of the new movement for *applying* scientific knowledge in these matters; knowledge of some of the ills had existed before, but it had not been applied and was therefore incomplete. They entered the Department five years before a Medical Inspectors' Branch was set up, and three years before the momentous requirement was made that medical practitioners should notify certain diseases (lead, phosphorus, etc., arsenical poisoning or anthrax), contracted in a factory or workshop, to the Chief Inspector.

Before the entry of the Medical Inspectorate, the long-established institution of part-time certifying surgeons† had brought some medical observation, largely unco-ordinated, to bear on industrial conditions. From their private practice among industrial workers the certifying surgeons often gathered important records of individual cases of industrial poisoning, respiratory and other diseases,

* Such as white lead manufacture, lucifer match making, paint and colour making, hollow ware enamelling.

† For examination of children and young persons under sixteen years as to physical fitness for working in a factory, and enquiry into certain grave and fatal accidents.

arising from injurious conditions of manufacture. These records could be and were fully utilised by the Medical Inspectors in due course—as may be well seen in the reports and other writings by Dr. T. M. Legge and Dr. E. L. Collis.

Not until after the War (in 1921) was a medical Woman Inspector appointed to the Medical Branch —Dr. E. M. Hewitt. During all the earlier years from 1893 reliance was placed on the initiative of the Women's Branch of the Department for the highly necessary observation by women of conditions and habits of women and girl workers. An outstanding obstacle to obtaining exact knowledge of industrial mortality and disease amongst women arose from the omission to enter in mortality and hospital records the occupation of married women, whether occupied prior to or during married life. This entailed a closer individual investigation among women than among men for clues to industrial disease and careful following up of their cases outside the factory as well as inside. When information was needed on grave injury and early deaths among, for example, asbestos workers or china scourers, in cases of lead poisoning or phosphorus necrosis, or mercurial poisoning in the days before notification was compulsory, indispensable contributions were made by the investigations of Women Inspectors in many directions, and especially as to the effects of lead processes on maternal functions.

The earlier tentative "special rules" for safeguarding the workers against "dangerous and unhealthy incidents of employment" had been made in 1892 and 1893, under the new powers of

the Factory Act of 1891 suggested by the special rules under the Mines Acts. The special rules were made on the proposal of the Chief Inspector to the occupier of the factory after the process, machinery, or manual labour in question had been scheduled by the Secretary of State as being, in his opinion, "dangerous or injurious to health, or dangerous to life or limb, either generally or in the case of women, children, or any other class of persons." Each occupier had a right of objection to the rules proposed, and provision was made for arbitration. In the absence before 1896 of any medical experts on the staff or of any substantial statistical evidence of cases of industrial poisoning and disease, the earliest special rules could only be few, simple, and experimental in character. Gradually, under the direction of the first Medical Chief Inspector, Sir Arthur Whitelegge, and the very slowly added medical staff, beginning with Dr. T. M. Legge in July, 1898, knowledge and vigour of regulation grew. Administrative methods of establishing regulation were greatly improved, and the uncertainties of arbitration in such highly expert questions were removed by the Act of 1901. The early years of the twentieth century saw what was unquestionably the most remarkable development that had ever yet been attempted in any age or country in applying scientific knowledge and care to the protection of workers from industrial disease and injury. At last the reproach made by many medical observers (and, particularly in our country, by Medical Officers to the Privy Council in 1860) began to be lightened; the reproach that "the canker of industrial diseases

gnaws at the very root of our national strength," that "the sufferers are not few or insignificant, . . ." that "the magnitude of the evil is most imperfectly appreciated," whether by the authorities or by the "slowly suffering artisans themselves"—and that all this was going on for lack of expert advice and the administrative application of scientific methods to the problems involved.* It was so long before the idea of industrial labour as a social service began to gain ground that only a few enlightened manufacturers, here and there, could attempt to try remedies.

It was not only medical knowledge that was needed to trace effects on the human frame of poisons (such as lead, arsenic, white phosphorus, mercury, etc.); of anthrax and tetanus germs; of gaseous and acid fumes; of injurious and excessive dust; of excessive moisture or heat; of muscular or nerve overstrain and impure air. The work of experts in engineering, physics, chemistry, and, not least, in patient observation of the habits, working conditions, ways and circumstances of the workers affected, was equally indispensable. This had been to some extent provided for in the reorganisation of the Inspectorate that followed the Consolidating Act of 1878. The Acts of 1883 and 1889 to regulate white lead and cotton cloth factories carried this matter further by exploration of some of the most injurious conditions. Thus, in the ranks of the general Inspectorate knowledge was available for technical work in some of these directions.

* See especially Fourth Report of the Medical Officer to the Privy Council, 1861, pp. 29, 31, etc.

It must be remembered that the principal Act had long provided for the great safeguard of exhaust ventilation for removal of dangerous and injurious dusts, fumes, or other impurities generated in the processes or handicrafts carried on—though its full preventive scope was only gradually realised. Its significance was explicitly and repeatedly emphasised in later days by the Senior Medical Inspector, Dr. Legge,* and the pioneer work of such leaders as the late Mr. E. H. Osborn, H.M. Superintending Inspector of Factories, and the late Mr. C. R. Pendock, H.M. Inspector, in the application of engineering knowledge to these matters, should always be specially remembered. Their work was carried forward in due succession by Mr. Sydney Smith and Mr. Stevenson Taylor.

Under the Cotton Cloth Factories Act of 1889,† administered by Mr. E. H. Osborn and by Mr. Williams, now Superintending Inspector, exact standards of ventilation and hygrometers were first introduced in dealing with the dangers to health from excessive humidity of the atmosphere and high temperature in the workshops. Out of these experiences came recognition of methodical tests of chemical purity of the air of workrooms. Later, scientific emphasis was laid—by Dr. Leonard Hill, F.R.S.—on the truth that it is rather the physical than the " chemical conditions of confined

* In " Occupational Diseases," by T. M. Legge, C.B.E., M.D., etc., p. 68, and in " Lead Poisoning and Lead Absorption," by T. M. Legge and Kenneth W. Goadby, 1912, pp. 98-102.

† Later amended and in 1911 developed into special regulations under the Principal Act of 1901.

atmospheres which influence health and happiness " of the worker. Before it was laid down as a truth that " overheated and still air decrease the activity of the body furnace and so lead to lessened resistance of disease," Women Inspectors were steadily bringing persuasive pressure to bear on occupiers for introduction of mechanical ventilation to ease the visible strain they saw in industrial work in the stagnant heat of many a factory or workshed.

When Departmental Committees were set up, from 1892 onwards, for enquiry into various dangerous trades, outside medical experts were appointed as members before the advent of the Medical Inspectorate. In 1893 the precedent was first set of appointing a Woman Inspector, Miss Abraham, to such Committees where employment of women in the industries made this specially desirable. Miss Abraham also served on the main Dangerous Trades Committee, 1895 to 1899, on whose recommendations various codes of special rules followed. With Dr. Legge I served in the enquiry into Enamelling and Tinning of Metals, begun in 1901, and reported on for each section separately in 1903 and 1907 respectively. Less than ten years' application of the first special rules of 1892 for these processes had sufficed to show their inadequacy for controlling the risks of lead poisoning. Separate regulations of the entirely distinct sources of danger in vitreous enamelling and in tinning of metals was not at first seen to be necessary; the obscurity of the sources in the latter led us to a point where our need of chemical assistance was evident, and this was provided when the services of Mr. G. Elmhirst

Duckering, H.M. Inspector of Factories and a skilled chemist, were lent to us. A difference of method in the tinning of hollow ware and of the tinning of terne plates had given us a clue. His long studies and exact measurements of the degree of contamination of the air by fumes from the tinning bath, and from the surface of the tinned hollow ware article as it emerged from the tinning bath, led to definite conclusions as to the presence of lead chloride in the fumes breathed by the worker. And so—at last—we reached the possibility of obtaining effectual measures of control.* The number of cases of poisoning began to fall in the period 1909-11, and in 1920 only two were reported (both women), and these from a factory where there had been a breakdown in exhaust ventilation. Meanwhile, methods of manufacture had become less dangerous as well as methods of exhaust generally more effectual.†

From this experience and from the parallel activities of Inspectors, chemists, manufacturers in the far greater earthenware and china industry, came new methods of determination of dust and poisons in the air of workrooms. There came also re-enforced activity in anemometer tests of mechanical exhaust for poisonous fumes and dusts; amendment of construction of exhaust apparatus, and other detailed progress in what Mr. Pendock well described as " means of cleaning the atmosphere:

* Reports on Enamelling of Metals, 1903 (Cd. 1610), and on Tinning of Metals, 1907 (Cd. 3793), especially pp. 23 and following.

† Annual Report of Chief Inspector, 1920, p. 53.

the science of *air purification*, and a highly important science it is."*

The extent of the work that was waiting, almost untouched, in the last decade of the nineteenth century, to be overtaken by persistent, meticulous application of this science to protection of the health of the industrial worker, may be partly realised by a backward glance at some of the appalling records as to disease and premature death in certain dusty processes. It must be remembered in considering the early figures that they were gathered before the discovery and recognition of the ubiquitous tubercle bacillus.

Let us take, first, flax preparation and carding, where women workers were in the majority:

"Dr. Purdon, in 1872, states the mortality as 31 per 1,000, and Dr. Whitaker in his report on the health of Belfast, 1892, says the carder's average length of life is only 16·8 years of work. If a girl gets a card at eighteen her life is generally terminated at thirty. The preparer's average is 28·7 years of work. The 'rougher' and the 'sorter,' said Mr. Osborn, work in a continual cloud of dust composed of particles of the fibre 'which is inhaled, and irritates and dries the throat and gradually finds its way into the lungs, producing chronic inflammation of the lining membrane, which soon manifests its presence by the worker being attacked each morning with a paroxysm of dyspnœa and coughing. A worker suffering thus is said to be 'poucey' (pouce=dust=*poussière*) . . . some roughing rooms have no ventilation but windows

* "Observations on Ventilation of Potteries and Removal of Dust," by C. R. Pendock, 1913, Stoke-on-Trent.

opening at the upper part, and the workers face the wall, which, of course, reverberates the dust upon them."*

Far higher was the mortality per thousand among " china scourers "—a few hundred women exposed to fine flint dust in the china industry. This flint dust also severely affected men in china biscuit-placing shops, in saggar emptying, and other operations.† China scouring is a dry process, of which the word is descriptive, to which the ware is subjected after it has been fired in the kiln. Before firing each piece is buried in a bed of fine flint dust in a receptacle known as a saggar, in which it is placed in the kiln, so that it may not adhere to the saggar or other pieces of ware during firing. On coming out of the kiln it is necessary to free each piece from adhering particles of the flint dust by friction of three kinds: scrubbing with a stiff brush moved by hand or by power, rubbing with stiff flannel, and with sand-paper. The extent of the injury from the process was found after patient research by Miss Deane and Miss Paterson in 1898. Rediscovered, one might more precisely say, for the enquiries of the Royal Commission of 1841 on Employment of Children and Young Persons had made it clear that the air of the rooms in which china scouring was carried on was filled with finely pulverised flint, the inhalation of which was " nearly as fatal as that of the grinding stones of Sheffield." In these 57 years nothing had

* Annual Report of Chief Inspector, 1893, pp. 194-5.

† *Ibid.*, 1898, pp. 162-4. See also Annual Reports, 1919 and 1920.

changed essentially. "Not many scourers live long; we all feel overloaded upon the chest and cough very much; I cannot lie down all night" (Commission of 1841). "Against the danger of this occupation scarcely any provision has been made" (Sir John Simon to the Privy Council in 1860). In their preparation of some evidence for an arbitration in Stoke-on-Trent in 1898 on revised special rules chiefly concerning lead in earthenware and china, the Women Inspectors discovered a remarkable weakness in the rule controlling flint dust. Whereas the stronger rule for elimination of dust by a positive requirement of fans, applied to "towing" of earthenware (*i.e.*, rubbing soft clay dust off the pots with tow), the far more dangerous flint dust of china scouring was controlled only by a rule requiring removal of dust "*as far as practicable*," by mechanical or other efficient means. With energy they set to work to complete the evidence as to the mortality of this occupation—by examination of all death certificates, during two and a half years, of women between fifteen and seventy years who had died in Longton, the chief china town, from respiratory diseases and phthisis, and by visiting the homes of the persons. Comparing deaths per thousand among all women in Longton attributed by the certificates to these diseases with those, similarly, among women who had worked regularly at china scouring, they found that these deaths per thousand in the two years immediately preceding the enquiry had been nearly fifteen times as great among china scourers as among other women in Longton. The figures were

given in detail in the Annual Report for 1898. The Inspectors referred several cases of advanced fibroid phthisis that came under their notice to the newly appointed Medical Inspector, who attributed the physical signs in the lungs to inhalation of flint dust; three of these died within the year.*

The Inspectors visited all the factories where china scouring was carried on and found that, whereas efficient fan extraction had been installed in a few, yet generally full advantage had been taken of the permissive character of the rule regarding mechanical extraction of dust by omitting it. Some of the smaller china factories were wholly or in part unfitted for use as workplaces. The rule was amended as from January 1, 1899, with marked results in improved mechanical methods and in reduction of the disease by degrees. I found, by a comparative enquiry, ten years later, that the high mortality from respiratory disease and phthisis was reduced to less than half among china scourers, but this was still far too high a rate, and many extremely sad cases showed the need of strengthened provisions.† This information I gave with much other evidence to the Departmental Committee appointed in 1908 by Mr. Herbert Gladstone, since Lord Gladstone, to enquire into dangers from use of lead and injury to health from dust in china and earthenware and incidental processes.‡ The chair-

* Annual Report of Chief Inspector, 1898, pp. 135 and 163.

† *Ibid.*, 1908, p. 144.

‡ The Committee reported in 1910, Cd. 5219, Cd. 5278, and Cd. 5385.

man was Sir Ernest Hatch, Bart., and the able secretary, Mr. E. A. R. Werner, a skilled chemist.

To the work of this committee reference must presently be made in dealing with lead poisoning in potteries; here we must recognise the immense advance in control of the dust problem in these works that followed on the adoption of the recommendations of the committee. The age of inactivity on proven ills had passed. Undoubtedly the presence on the committee of leading manufacturers and workers largely conduced to the practical thoroughness with which the problems were handled.

Many other dusty processes affecting women that were not under special rules also engaged the close attention of Women Inspectors, of which the following examples may be given:

(*a*) Asbestos sifting, mixing, and carding; an industry singularly little considered until complaints from the girls employed came in to us year by year, from 1898 onwards. The sharp, jagged edge of the insoluble mineral dust has undoubtedly occasioned much illness, and death, from respiratory diseases. The first asbestos factory I entered was entirely without applied exhaust, one of the dustiest processes being carried on in a cellar. In another, revisited in 1906, on a complaint thoroughly justified by the thick, fog-like atmosphere in the carding room, ineffectual fan extraction had been introduced, but not applied to the points of production of dust. By this date there were good examples of well installed mechanical exhaust in large asbestos factories, and progress could be secured in the smaller works. In 1911 Miss Whit-

lock, M.B., an Inspector in the Women's Branch, made careful study for us of this industry, and found a considerable amount of phthisical, bronchial, and gastric trouble still present. The least defect in the working of the applied ventilation was dangerous.

(*b*) Silk waste carding and spinning gave rise to woeful complaints of dust from women, from 1898 onwards. Increased injuriousness of the excessive dust in preparatory processes coincided with the introduction of an inferior quality of silk. Dr. Legge found, in samples referred to him by Miss Squire, débris of silkworms containing "an enormous number of hook-like structures, probably portions of the thoracic and abdominal segments of the pupa case." This gave support to the apparently strange opinion of the workers expressed to Miss Squire that they were coughing up not silk but silkworms; and it led us back to Ramazzini's account, in 1678, of the effect on silk workers of the combing of "grosser filaments, which have parts of the bodies of silkworms mixed with them," that they were troubled with "a vehement cough and great difficulty of breathing . . . and few of them live to an old age."* Again and again the need for scientifically applied exhaust had to be pressed for in this side of the silk industry, something inadequate was repeatedly tried, and choked-up ducts to fans even led to the beating back of dust on the workers. Eventually the introduction of machinery for cleaning the material before carding—steadily urged on the occupiers—helped

* Annual Report of Chief Inspector, 1898, pp. 135, 171-2.

to solve the problem of efficient extraction of dust.*

(*c*) Teazle brushing in hosiery factories, a finishing process for smaller articles in Leicester and Nottingham, produced excessive dust of broken powdery wool and cotton fibre, causing great discomfort in eyes, and choking sensations in throat and chest. The trouble was removed and valuable surplus dust for reselling was saved by applying exhaust with closely fitting cover to the machine and also a patent delivery roller at the back. Excellent results were reported in the following year, to the satisfaction not only of workers, but also manufacturers and foremen.†

(*d*) Mercerised cotton yarn dust was first noticed in 1902 as giving rise to what was known as "mercerised fever," shivering and sickness with cough and oppression in the chest. It was attributed to strong caustic soda in the cotton fibre, which was irritating to the bronchial and nasal passages. The trouble was removed by requiring exhaust ventilation.‡

(*e*) Miss Squire and her staff, when localised in Manchester from 1908, had their attention drawn (by complaints) to excessive dust in the making-up warehouses in which girls were employed in "hooking and lapping" heavily "sized" grey shirting and stiffened muslin. "Stuffed-up" chests and throat trouble and sickness were the results, and

* Annual Report of Chief Inspector, 1906, p. 220, and 1920, p. 75.

† *Ibid.*, 1906, p. 221; 1907, p. 173.

‡ *Ibid.*, 1902, pp. 171-2.

great discomfort was felt even by the Inspectors on their visits. They systematically served notice on the occupiers to provide localised exhaust ventilation, which removed the trouble.*

(*f*) Buffing of plated articles—*i.e.*, mechanical friction with Trent sand sometimes mixed with lime —in Sheffield electro-plate works was the subject of a careful study by Miss Whitlock, M.B., to whose interesting report reference may be made by those desirous of following up the subject.† In the majority of buffing shops the women stayed in for their meals, and application of exhaust ventilation was only found in one shop. She found that the cases of phthisis among them were more than double the rate per thousand of those amongst women over fifteen years in the town, and that anæmia was prevalent.

(*g*) Dust as well as other injurious features in little scattered country flax scutch mills was specially followed up by Miss Martindale from 1907 onwards in North Ireland. Ineffective fans were fixed in many of these mills, and described by the workers as " a pest and a torment," through their alternative capacity for stirring up the injurious dust and for getting choked up with fibre ! In 1914 I took part in a conference in Belfast between representatives of the Factory Department and the Irish Board of Agriculture and Technical Instruction with the aim of concerted action as regards mechanical ventilation of the scutch mills. These mills, being mostly situated near flax fields for the first stages of preparation of the dried fibrous material for manu-

* *Ibid.*, 1909, p. 146. † *Ibid.*, 1910, p. 129.

facture, concerned both Departments. The War intervened, and these problems have there fallen to the charge of a new administration. The question was again raised for the Factory Department during the War, when flax growing and scutching was initiated by Government action in various parts of England.

Many other dusty processes and the health of women in them engaged our attention; in rag and refuse sorting, fur-pulling, in hatters' furriers' factories and horsehair factories, in starch rooms of confectionery works, hemp-rope works, sack-mending, cotton waste works, indiarubber works, eiderdown and kapok-filling factories, clay pipe scouring, embossed paper lace-making, etc. In a lace-tinting business for dressmakers we called in Dr. Collis's aid for investigation of marked injury to health of all the workers; he not only found the soreness of nostrils and pharynx associated with inhalation of dust, but also phthisical results from the finely divided dust shaken out by hand from the lace. Here the occupier at great expense provided efficient exhaust, drawing off dust from the lace without this shaking by hand. Improved methods of working were in our experience a frequent consequence of our demands for extraction of dust.

In connection with an enquiry in Sheffield into the association of phthisis and dusty trades Miss Whitlock found that the system of compulsory notification of consumption already in practice there in 1911, combined as it was with enquiry into occupation of the patient, greatly facilitated her work.

Bronzing,* whether by hand or machine, of all kinds of paper programmes, showcards, prospectuses, Christmas cards, etc., in lithographic works or departments of works, affected workers in ways that almost perennially commanded our attention. Dust from bronzing was on the border line between those that are simply mechanical in action on the respiratory passages and those that are either irritant or poisonous. In the earlier years the work itself was generally intermittent, not continuous. Although the Dangerous Trades Committee in 1896 made recommendations in their first interim report for control of risks in this process by special rules, the apparent absence of permanent injury to health among those engaged in it led in the first place to the application by the Home Office of voluntary, not compulsory, rules for protection of the workers. Our activities, conjointly with District Inspectors, in pressing questions of dust extraction, means of maintaining personal cleanliness, overalls, supply of milk, examination of workers by the certifying surgeon, and so on, fortunately led to improvement in bronzing machines with vacuum arrangements for dust. Probably they led also in part to the concentration of the work in the hands of a few occupiers that followed; finally, special regulations were made compulsory in April, 1912.

In 1911 an important step was taken for more systematic work by Women Inspectors in the field of dangerously dusty processes. In conference

* Which produces the effect of gilding by application of very finely divided metallic dust (copper, zinc, tin, antimony, being various ingredients).

with Mr. Pendock, as District Inspector and ventilating expert, arrangements were made by Miss Lovibond (Mrs. Moorcroft) for the taking of records, on tabular cards, of anemometer tests at hoods connected with mechanical exhaust ventilation, so as to bring steady pressure to bear on occupiers of factories for testing and maintaining efficiency in their installations. As I said then: "There can be no question that supervision of the provision of really efficient exhaust, and steady maintenance of it, when provided, in thorough working order is the supremely important task of the Inspectorate in all dusty trades where dust is of a kind inhaled, whether the dust is simply mechanical or irritant or poisonous in contact with the mucous membrane or respiratory tracts."* The taking of these records, of which copies were supplied to occupiers, fortunately aroused much interest, and among workers as well as employers. In the next year about 1,000 records were made in the Potteries alone, including all places where workers, reported for lead poisoning, were working at or near the exhaust ventilation. Miss Whitlock took over this work at the close of that year and added an invaluable enquiry into nearly all the reported lead cases among women in potteries in 1913, giving us careful studies of the conditions and ways of workers, with suggestions for future prevention. Early in 1914 we lost her increasingly valuable aid in medical

* Annual Report of Chief Inspector, 1911, pp. 150-7. The form of card record used can be seen on p. 219 of "Lead Poisoning and Lead Absorption," by Drs. Legge and Goadby.

questions concerning women through her transference to the Industrial and Reformatory Schools Department. Then the great upheaval of the War turned us away from quiet, fruitful, concentrated activities of this nature to the many problems arising from the intensified industrial production by women for national needs.

I have been here led from point to point by following up one kind of protection, which is a fundamental one, against risks in industry from the various types of dust and from lead fumes. This will suggest, perhaps, as well as any other method of approach, something of our share as Women Inspectors on behalf of women workers in the immense work that was carried on by the Factory Department during the years 1893 to 1914 in striving to lessen the special risks of injurious and dangerous processes. It is impossible, except by devoting a whole book to it, to do more than give samples of our service in this side of Factory Act administration.

Some notion of the magnitude and complexity of dangers to be regulated and injuries to be prevented, with the chief preventive measures embodied in "special regulations," can be gathered from Appendix I.—a tabular summary that I made in 1913 (and which has been brought up to the present date by Miss Squire, O.B.E.), giving these details in alphabetical order for all the trades, processes, and descriptions of manual labour, that are certified by the Secretary of State as "dangerous or injurious to health or dangerous to life or limb."

In addition to the research needed before regula-

tions were made, to the giving of evidence to Committees, Arbitrators, and Commissioners appointed by the Secretary of State, when objections to draft regulations had to be reviewed—besides instruction to occupiers and workers, and prosecution when necessary—we gave a great deal of attention to another side: the exclusion, or proposed exclusion, from very dangerous processes of classes of persons whose age or sex made them specially susceptible to poison or other risks. The special interest of the whole community in protection of maternity and health of young workers, for example, was the chief point on which we had influence in developing regulations for the white lead industry, in which the extraordinarily dangerous character of the main processes had led to special control years before Women Inspectors entered the Factory Department. Those who desire to follow out the history of regulation in this industry, originally the foremost among "occupations injurious to health," might begin with the account in the Annual Report of the Chief Inspector for 1879, when it was already illegal to employ in it any person under eighteen years of age; and might further consult a complete concise account of the various processes, their dangers and prevention, in "Lead Poisoning and Lead Absorption," by Dr. T. M. Legge and Dr. K. W. Goadby, Chapter XVI.* On and after July 1, 1899, it became illegal under special rules to employ a woman in the peculiarly dangerous processes in

* A vivid description of women's work in blue beds before conversion into white lead was given by Miss Sadler in the Annual Report for 1913.

white beds, stoves, etc. And, so far as *this* industry is concerned,* most of the effect of the Women and Young Persons (Employment in Lead Processes) Act, 1920, passed in pursuance of the Washington Convention of 1919, had been long ago attained in our country.

Other dangerous lead processes, originally highly serious for young women workers, are found in the electric accumulator industry. Here again our evidence supported the exclusion of these workers from such risks, and since 1903 " no woman, young person, or child " may be employed " in the manipulation of dry compounds of lead or in pasting."†

Although it was not until 1908 that the primary investigation by an Inspector of reported cases of industrial poisoning or anthrax cases affecting women and girls was assigned by the Home Office to the Women Inspectors, we had always used these reports for supplementary enquiries. We had already, before 1900, a wide knowledge of the conditions under which lead, phosphorus, and mercurial poisoning had occurred, and had brought to light unreported cases, particularly of lead and phosphorus necrosis, and some secondary effects of lead poisoning in women.

The latter point was strongly exemplified in some information that I presented in the Annual Report for 1897, gathered by Miss Paterson and Miss

* Comprising twenty-one factories registered in 1920, as compared with 639 for pottery manufacture and decoration.

† Regulations for Manufacture of Electric Accumulators, 1903, No. 1004.

Deane during that year. They enquired into seventy-seven reported cases of plumbism amongst married women employed in lead processes in the Potteries of Staffordshire, where the most injurious lead processes—*e.g.*, colour dusting, ware-cleaning—fell to women. They found among these a high degree of childlessness, stillbirths, and miscarriages; that thirty-six only had had living children averaging three each, and of the total number of children two-fifths had died, the majority succumbing to convulsions in infancy. Two sample cases gave a tragic warning as to the social as well as individual physical effects of employment in lead processes on maternity: "A.B., aged twenty-nine, married seven years, had worked in lead ten years, had three miscarriages, five stillborn children, and one child alive who died in convulsions when a few weeks old. C.D., aged twenty-five, married seven years, began to work in lead in her seventeenth year, had had four miscarriages and three stillborn children; her one living child was born after she was absent from her work."*

Other cases as sad and sadder were found first by Miss Martindale, then by Miss Vines, during their successive and systematic work in the Potteries from 1903 to 1908. The latter visited practically all women reported for lead poisoning, and a striking example was the case of Mrs. B., colour duster and paintress, aged thirty-eight, married fifteen years, who had nine miscarriages and one living child, ill all the three years of its life; was herself disabled with wrist drop of both hands. She had to take

* Annual Report of Chief Inspector, 1897, p. 101.

her case into court to obtain compensation due to her.*

Although such enquiries dealt with a grave evil to some extent understood before, the subject gives a good example of ways, arresting to the general onlooker, in which women investigators seized on features or consequences of industrial employment of women that concerned the nation. Their consequent action and recommendations emphasised the need of steady investigation by qualified women of absenteeism among women workers in lead processes, and the extremely unsuitable conditions of publicity under which medical examination in these early days sometimes took place in the factory. "This led, not infrequently," said Miss Deane, "to failure in detecting the very evils which it is the object of the examination to find out and eliminate."† It appeared in 1900, when I took some prosecutions against leading employers for neglect of duties regarding medical examination, that there was a strong tendency for girls who felt ill to leave a pottery without the suspension by the certifying surgeon provided for in the special rules of 1899. Poverty, dread of loss of employment without compensation—which was later made available for them in such cases by the voluntary action of the manufacturers themselves—seemed to me the strongest cause of that tendency. Records of poignant individual cases accumulated by the Inspectors made this factor very clear.

In the remarkable Pottery Code of Regulations, 1913, which followed on the general lines of drastic

* *Ibid.*, 1906, p. 214. † *Ibid.*, 1900, p. 369.

recommendations made by the Departmental Committee under Sir Ernest Hatch,* careful requirement was made that a private room should be provided for the examination of workers by the certifying surgeon, and other safeguards of privacy were laid down. Some other provisions needed to secure effectual use by the workers of safeguards provided for them followed the lines indicated by complaints of women workers to the Women Inspectors. On these they had accumulated evidence, sometimes with the aid of information given by officials of the "Potteries Fund," a voluntary fund for assistance of women and girls suffering from lead poisoning in this industry. For example, separate washing conveniences were now required for the sexes; women had explained to me in detail how they could not use the same conveniences as men coming from hot and dusty processes such as "glost placing," in which a large proportion of the men and boys were employed. New detailed care was given in the regulations to provision and maintenance of protective clothing and messroom arrangements; suppression of dust by methods and means additional to those of exhaust ventilation; better control of temperature; control of heavy weight carrying by young workers, cleaning of floors, boards, and benches; new limitation of hours for men as well as women in dangerous processes; exclusion of women and young workers from certain processes. These and other matters, particularly rules against heavy weight carrying, and for better methods of cleaning

* Appointed 1908 by Mr. Herbert Gladstone, reported 1910, Cd. 5219, Cd. 5278, and Cd. 5385.

floors, boards, etc., which were strongly supported by the evidence arising out of our long researches, were remarkably thoroughly dealt with in the code. An entirely fresh stimulus was applied to the sense of responsibility in the occupiers of potteries by a requirement that the occupier himself should appoint a competent person to carry out systematic inspection of the working of all the regulations, and to keep records of the inspection. This was truly a novel requirement in so ancient an industry, relying as it too long had done on traditional methods. How much it was needed may be seen in a sample prosecution by Miss Martindale in 1913. She had found that, so far, the tendency had been to note and record only breaches of the code by workers. She said: "Undoubtedly this is salutary, but not, I take it, all that regulation 27 was intended to do. I revisited with Miss Whitlock a factory in which in October she had noted not less than twenty-six breaches of the regulations. The record of self-inspection showed no irregularities since July. . . . The Works Inspector stated that he 'had not observed any,' although the irregularities were such palpable ones as: not providing milk, not affixing thermometers and placards, not painting boards red."* Conviction and heavy penalties followed the taking of proceedings.

In addition to the industries above touched on, where women and girls have run risk of lead poisoning, litho transfer making for decoration of earthenware china gave us much thought in the past owing to the exposure of young, anæmic girls to

* Annual Report of Chief Inspector, 1913, p. 89.

finely powdered dust containing lead. Inclusion of the process under the stringent Pottery Regulations, and improved methods of dust extraction, have greatly reduced the risks. The glazing of bricks with lead in the glaze, later shown to be unnecessary, was found by Miss Squire in 1898 to be causing fits among the girls who were scraping the edges of the bricks. These attacks had been thoughtlessly attributed to hysteria until brought under medical observation. Heading of yarn dyed by lead chromate and painting of perambulators still take prominent place amongst other industries from which lead cases affecting female workers are notified. This may be seen in the Table given below in Appendix II., which is included in order to enable readers to appreciate the reductions in industrial poisoning that have followed the changes indicated since 1900. The interesting liability of lead to turn up in miscellaneous industries, in quite unexpected ways and places, and especially in the great range of small metal industries in the Midlands, is too wide a subject for further consideration here. Sample cases and a long list of industries may be seen in the Annual Report for 1913.*

The great general fall in number of reported lead cases, particularly in potteries, that had come about by 1914 (see Appendix II.), and is still more marked in later years, is no doubt due in the main to the preventive measures I have so briefly indicated. Foremost of all came improved methods of exhaust ventilation, but very important also were cleanli-

* Annual Report of Chief Inspector, 1913, pp. 137-8.

ness and reduction in hours of work. Until trade is quite normal, however, the true effect of these measures and of the great aid given first by legal compensation and then by National Health Insurance—which enable workers to obtain treatment and rest from work at an early stage of illness—cannot be fully known. The detailed, thorough investigation done among the women exposed to lead by Women Inspectors (and particularly in 1912 to 1914 by Miss Whitlock), which culminated in a series of prosecutions for numerous contraventions of the new regulations affecting them in potteries, no doubt led to a fresh start for them. Of industrial poisoning Miss Whitlock wrote in 1913: "Poverty with its attendant worry and lack of nourishment appears to be a predisposing cause in many cases. The youth of many of the workers is noticeable. . . . Apart from the painful character of the illness, the length of time the cases last is a serious matter. . . . I often came across cases which had been over a year on compensation." "A woman in a warehouse told me that she had been over three years at work after three years on compensation and still suffered from pains in her limbs, and was obliged sometimes to absent herself from work." Of cases of serious illness among women heading yarn dyed in lead chromate, Miss Tracey observed: "Without home visits it would have been impossible to gauge the extent and severity of the illness."* Unquestionably specialist work by Women Inspectors still remains to be done for women workers in dangerous trades, even

* *Ibid.*, 1913, pp. 88, 89.

though the figures of poisoning seem to show them to be now in a much safer position than men. The figures alone do not disclose the whole matter. Much may yet be learned by following up "absent" or "left" women workers, as well as by seeing reported cases in their homes. A marked mobility of women's labour in lead processes in potteries was found in 1911 by Miss Sadler. In sixty-eight potteries at the time of inspection (between January and September) no less than 258 were marked in the special register as "absent" or "left," apart from suspensions and reported cases. Out of forty cases diagnosed as lead, she found twenty-four still suffering and in receipt of compensation; and also that the majority were under thirty years and not suffering from accumulated effect of bygone conditions.* When compulsory compensation began to take effect it was gratifying to watch the growth of realisation among manufacturers of the poverty caused by plumbism. In the past much had been hidden in obscurity by the tendency of the poor to suffer in silence. Manufacturers showed increasing recognition of the importance of utilising compensation to the best advantage for the individual cases.

From time to time, though rarely, mention was made in Annual Reports of the appointment of a medical woman by employers to supervise the health of women and girls in a large factory. This movement passed into a new phase during the War, when national munition factories set the example of appointing whole-time women medical officers.

* Annual Report of Chief Inspector, 1911, p. 145.

In 1920 we learned that in "a growing number of factories medical women are appointed to supervise health of women and girls."* In the same year the first appointment of a woman as certifying surgeon was made by the Chief Inspector—in West London.

These developments in drawing medical women into official contact with industry, and particularly the appointment of a woman as one of the Medical Inspectors of Factories, have a greater significance for future protection of the health of women workers since the absorption of the Women Inspectorate, from August 1, 1921, onwards, into the general district work of the whole country. Instead of concentrating enquiries and action on behalf of working women, the Women Inspectors must necessarily give their time largely to men and boy workers, male workers being not less than 65 per cent. of all persons employed in factories and workshops.

Meanwhile the whole pottery industry, the match-making industry, and others with features that concerned the health and safety of women in a special degree, have reorganised themselves on lines recommended by the Whitley Report. Their Councils have happily immediately concerned themselves with improving conditions of health and welfare. When one sees, as I have, the admirable detailed work done for health and safety in a factory with the aid of workers on a works' committee in

* Annual Report of Chief Inspector, 1920, p. 84, and Report of War Cabinet Committee on Women in Industry, 1919; Memorandum by Dr. Janet Campbell on Health of Women in Industry, p. 293, regarding urgent need for Women Medical Inspectors of Factories.

an industry with a National Council—particularly in a factory with an experienced welfare superintendent working harmoniously with the works' committee—one realises what a long way has been travelled since 1893. Each year, since 1919, has seen contact of the Factory Department with new Councils, in questions relating to health, safety, and welfare—a matter to which we may revert in Chapter VIII.

The pursuit of certain salient developments in control of foremost industries responsible for lead poisoning where women are concerned has led me so far to pass by absorbingly interesting work of Women Inspectors on varied risks and injuries during the twenty-seven years under review, thus only (as in the question of control of dust and fume by mechanical means) could I, in so enormous a subject, sketch some kind of picture, that might remain, of the women's claim and our lines of response.

It is necessary, however, in order to have any true picture of the work of the Women Inspectors to sketch rapidly some other of its less closely interwoven features. The effects of bisulphide of carbon as a solvent in the making of rubber articles; of white phosphorus for the dipping paste in match-making, producing phosphorus necrosis, called, with a sinister familiarity, "phossy jaw"; of a solution of mercury to assist felting in hatters' furriers, causing varying degrees of mercurial poisoning; these took even more of our time and thought in early years than did many of the injurious dusts already mentioned. As for white phosphorus, con-

siderable as was our share in tracking down hidden cases of necrosis and other ill-health in lucifer match girls, and in helping to build up special rules against the horrible risk of painful and disfiguring disease, yet all that is now only of historical interest, for statutory prohibition of the deadly ingredient in matches, whether manufactured in our country or imported, came in 1908 by an Act which took effect from January 1, 1910. And the active Joint Council of this reformed industry and intelligent works' committees in some factories, with their highly developed mechanical methods, fittingly bear moral responsibility for seeing that no such risks ever arise again. Our last reference to any cases of necrosis was in the Report for 1909, when three young women were (all from one factory) under treatment in a local hospital—one for her first operation on the jaw, another for her fourth, while the third, seen at home, had had two operations. All had suffered much. Some cases arose during the War among men employed in manufacture of phosphorus. In india-rubber works of recent years we have seen and dealt more with the effects of naphtha fumes, dust, lead, great heat, and heavy weights, than with bisulphide of carbon covered by special rules. The last bad case we had was in 1911, from a factory where press of work led to employment of girls for a longer consecutive spell than the two and a half hours permissible under special rules. Hysteria, bordering on insanity, followed, and the poor girl was summarily dismissed for "insobriety and rowdyism." She recovered quickly on separation from the work, and was

restored to her usual quiet self-control.* In the following year we had some cases of mercurial poisoning in a hatters' furriers' workshop due to particles of dust from rabbit fur previously brushed with a solution of mercury, the process being known as "carotting." These were attributed to a failure to maintain, in good repair and efficiency, the otherwise excellent system of exhaust ventilation, and to the use of an extra strong solution of mercury to assist the felting property of inferior fur.†

As for anthrax, owing to the supreme importance of bacteriological research and technical remedies requiring specialists in this industrial disease, such services as we were able to render, in investigation of the circumstances in reported cases affecting women, although far from negligible as regards conditions in factories, were entirely subsidiary to the work of the medical branch. Sometimes, too, we disclosed hidden risks to women, engaged at home in cleaning and mending of a husband's clothing when he was employed in handling hides or other infective material. Two out of six cases affecting women in 1914 occurred amongst women not working in industry, one the wife of a tanner. The prosecution of a brush manufacturer for breach of regulations in his factory brought out the fact that one of his outworkers, who had suffered from an attack of anthrax, was not covered by protective regulations. The obscure origin of some cases,

* Annual Report of Chief Inspector, 1911, p. 147. The old Special Rules have been converted into more modern Regulations in 1921.

† Annual Report of Chief Inspector, 1912, p. 138.

even among factory workers, appeared in a case affecting a cotton spinner engaged in cotton that had been shipped from Alexandria, and in various cases among women sorting or mending sacks that had conveyed bone dust.*

Carbonic oxide poisoning, particularly in laundries, traceable to escape of gas through defective fittings of ironing machinery, was a subject that repeatedly engaged the attention of Women Inspectors receiving complaints of illness among the girls employed on this work. In one laundry, which had escaped inspection through failure of the occupier to notify its existence, girls were found to have been gravely ill with severe symptoms of this form of poisoning. Proceedings instituted against the occupier for the failure to notify occupation and for using a gas iron emitting noxious fumes led not only to conviction, but to a special penalty (on account of the injury to health due to his neglect of provisions of the Act), which was applied to the benefit of the injured worker.†

The use of bichromate of potassium, causing "chrome holes" in the hands of workers taking a very long time to heal, in dye works and in wholesale photography works, was also brought under our observation.

In these kinds of risks, in cases of illness in tobacco works attributed to nicotine poisoning, and in numerous cases and varieties of trade eczema (inflammation of the skin or dermatitis), we brought much information to the Senior Medical Inspector,

* *Ibid.*, 1913, p. 87.

† *Ibid.*, 1902, p. 168; and Factory Act, 1901, sect. 136.

and received his help in taking action to secure remedies. Among the trades and processes in which we gathered or discovered instances of dermatitis—some severe and obstinate, others quickly yielding to treatment—were lime-juice manufacture, fancy biscuit finishing in confectionery works, electro-plating with use of potash, mercurial processes in electric meter fitting, enamel dipping in metal hollow ware works, use of oil in tobacco twist rolling, spinning and "batching" with use of shale oil for softening the fibre in jute works, use of naphtha as a solvent for paint on the hands, lacquering in brass foundries, claret bottling, gut preparing at salt machines. In fish curing, where salt sores from the brine have been an affliction for centuries for the workers engaged in pickling herring, we did but turn fresh powers of observation on to a well-known industrial ill; and in this seasonal calling the making of a Home Office Welfare Order providing for first aid as well as rest-rooms and other amenities, has brought remedies that should be thoroughly effective in Yarmouth and Lowestoft.

At the outbreak of the War the whole position as regards the control of dangerous and injurious trades and processes stood in complete contrast to the almost stagnant conditions of legislation for hours of labour. Just when a new stage was set for new risks as well as new experiments, the Factory Department held the great advantage-point secured by the long scientific work, described above, in many different kinds of dangerous and injurious occupations. A markedly successful reduction in industrial poisoning had been achieved. Having

this body of knowledge and experience it was a comparatively simple matter to supply the same methods of control, when serious new kinds of industrial poisoning appeared during the War, in connection with the rapid development of aircraft and explosives manufacture. Cases of "toxic jaundice," popularly known as "dope poisoning," which occurred in the varnishing of the wings of aeroplanes by means of a solution containing tetrachlorethane and, later, in the manufacture and use of trinitrotoluene for high explosive known as T.N.T., could be quickly studied and the causes regulated. In the varnishing of wings of aeroplanes the ingredients of the solution were ultimately changed.* In the case of T.N.T. poisoning, resulting also in toxic jaundice, the Factory Department were able to supply to the Ministry of Munitions and Explosives Supply Department a sufficient body of evidence and the example of special regulations, for them to develop their own necessary safeguards in the national and the controlled factories. In the national and some of the controlled factories medical officers were specially appointed at the works,† and the whole of the evidence was reviewed both by Dr. Legge, Senior Medical Inspector at the Home Office, and the Medical Officers at the Ministry of

* The varnishing was to make the wings impervious to moisture and air. For the interesting story of the changed methods, see Annual Report of the Chief Inspector for 1914, chapter xii., and further, regarding methods of ventilation, the Annual Report for 1917, pp. 18-20.

† See Medical Research Committee Annual Report for 1916 and 1917 for experiments in laboratories and studies in factories.

Munitions. The remarkable reduction in cases of toxic jaundice may be seen in Appendix II.

Let us turn from disease or injury, the causes of which—such as dust, poison, germs, irritants, or a combination of any of these—could be definitely ascertained and controlled, and let us glance at more general features and conditions of work that tend to impair the strength or diminish the resisting capacity of the worker. Under this category the items on which the Women Inspectors concentrated energy and action, with marked results, were many. Some I have already dealt with, such as excessive hours, bad general sanitation, extremes of temperature, uncertain and low wages (leading to grave insufficiency of food and other necessaries). Foremost among those with which I have not yet dealt were heavy weight lifting, carrying or moving, beyond the physical strength or growth of the worker; long hours of unnecessary standing; heavy treadling or other undesirable use or strain of parts of the body in processes where adapted appliances should be substituted; excessive vibration from heavy machinery; excessively monotonous specialised parts of processes that could not be carried on for long without nervous strain; excessively wet or humid conditions of work; lack of means of preparing or taking food at the works, or of maintaining personal cleanliness in dirty or offensive processes (by suitable washing appliances and protective clothing).

It is impossible to enlarge on the study and action of the Inspectors in all these directions. The questions of messrooms and food, washing con-

veniences, cloakrooms, protective clothing, and seats are touched on in the last two chapters of this book. A few words may be said here on heavy weights which—in their great strain on children and adolescent girls and on mothers—made a special appeal to the Women Inspectors, and on undesirable use of parts of the body for certain processes.

In 1897 I first reported on investigation of complaints of an injurious pressure upon girls and women in factories to lift or carry heavy weights. I had to point to the fact that such complaints must be classified as "outside the scope of the Factory Acts," and that our "action has been confined to noting the conditions, and, where it appeared possible or likely to lead to good results, we have drawn the attention of the employer to them." I suggested that the system of preliminary examination as to physical fitness for the work to be done should be a possible way of partly meeting the difficulty in the care of young workers.* In the Factory Act of 1901 a provision was included empowering the certifying surgeon to qualify his certificate of fitness of young workers entering a factory by conditions as to the work on which a child or young person under sixteen is fit to be employed. At the suggestion of the Factory Inspectors this power was frequently used by certifying surgeons in many different industries to limit the weight that might be lifted, moved, or carried by these young workers—and with great effect in the Staffordshire Potteries.†

* Annual Report of Chief Inspector, 1897, p. 104.

† *Ibid.*, 1910, p. 130.

It was in 1900 that I quoted a view, expressed with some prescience by Miss Squire, on the probable effect of introduction into the English law of a requirement (such as there was then in the French law) specifically limiting the weights that might be lifted, carried, or moved by young workers and women. It has special interest in view of wartime experience, in national factories, of State control of labour-saving appliances to prevent overstrain of women and girls.

"We should probably see," she said, "a speedy increase in mechanical means of lifting and carrying in factories and workshops, such as hoists and cranes, trollies, endless bands, and other contrivances, now so conspicuous by their absence. . . . The introduction of such apparatus would not mean displacing of women and girls, it would only increase their remunerative work, for most of these affected are pieceworkers, and the time now taken up by journeys to and fro, fetching and carrying their materials or work, would be occupied in manufacture, and increase both their wages and the output of their departments.

"It is pitiable to see young growing girls employed as beasts of burden, staggering under loads that men hesitate to lift—yet in some trades this is an ordinary sight. . . . In brick-making, in tinplate works, in iron hollow ware, and in warehouses in hardware trades, I have found girls aged thirteen to seventeen carrying loads which weighed from 30 pounds to 111 pounds in the ordinary course of their employment. Many are the complaints of weariness and overstrain made to me by girls and young women—some of them mothers—who are too poor or too unskilled to leave an employment

which is making too great a demand on their physical powers, and which in some instances has caused serious injury."*

I myself saw in a hollow ware works, and had weighed on the spot, a weight of upwards of 50 pounds, consisting of piled-up galvanised iron buckets, that a young girl had carried across a yard and up a steep ladder steps without handrail. Yet even that seemed to me less serious than the heavy loads of damp clay carried by thirteen-year-old boys in Staffordshire Potteries, with strained looks and beads of perspiration on their brows. This matter has been carefully regulated, thirteen years later, by the special regulations for potteries.

In tinplate works girls of fourteen and fifteen years were found to be carrying loads of sharp-edged plates, weighing 100 pounds and over: one particularly small and slight girl of fourteen years was carrying 107 pounds with difficulty. Complaints were made of pains in the side and of swellings and bruises from the heavy weight on the hip. In one tinplate works boys with trollies were fetching and carrying the loads for the girls, a measure said to be impossible in other tinplate works.

"Women are very much at the mercy of their foremen and of the men with whom they work in such matters . . . girls in a wire-bound hose factory were slowly heaving up large coils of iron wire weighing 108 pounds from stair to stair up a steep ladder staircase, resting at intervals to take breath, while the foreman stood by and the rope for elevating the coils to the girls' machine-room

* Annual Report of Chief Inspector, 1900, p. 375.

hung idle. . . . The employer gave a sharp reprimand when he was made aware of it. . . . An obligation not to 'allow' the lifting and carrying by young persons and women of weights above a certain standard would probably best effect . . . the adjusting of work or the wages, the increased vigilance to protect the weak from being imposed upon, or the provision of labour-saving appliances . . . required to remove the evil."*

Remarkable examples were given by Miss Martindale between 1902 and 1904 of weights, and aggregate material, handled or moved in a day, in potteries and brickworks—*e.g.*, quarry bricks weighing 50 pounds each were carried by a woman or girl to the kiln and handed up to a man to place; girls wheeled barrows containing forty bricks weighing 9 pounds each; a girl handled 55 tons of clay a day in lifting bricks from a machine;† a boy of fourteen years weighing 77 pounds fetched clay for a moulder who worked in a shop up a steep flight of stairs, the weight of the piece of clay he was carrying was 69 pounds;‡ a delicate girl of fourteen years fetched on an average three to five lumps of clay an hour for the moulder, and was found carrying 67 pounds; a girl of seventeen fetched clay for eleven moulders, bringing them each four lumps a day, each lump weighing ½ cwt. The mother remarked to the Inspector on the exhausted state in which her daughter returned

* Annual Report of Chief Inspector, 1901, p. 175.

† *Ibid.*, 1902, p. 173.

‡ A small boy was once found by Miss Vines carrying a weight greater than his own weight.

home after doing " men's work ";* a boy of thirteen years was found struggling up a steep flight of stairs carrying clay weighing 78 pounds.

Patient observations of this kind went on in numerous industries year after year, and the mass of material in the published Annual Reports is great. Ventilation of the question led to its inclusion in various Home Office Orders of Regulations (*e.g.*, fruit preserving works in 1907, potteries in 1913). The most important step, however, was the passing of Clause 3 (4) in the Employment of Children Act, 1903: " A child shall not be employed to lift, carry, or move anything so heavy as to be likely to cause injury to the child," and " child " was defined as a person under the age of fourteen years. In due course the Factory Inspectors took cases into court under this clause, and penalties were obtained. Public opinion awakened to the evil, and much good was done by the Inspectors when they simply called the attention of many employers to the need of limiting weights lifted and carried by young growing workers. When Miss Lovibond, for example, drew the attention of employers in Burnley to heavy cloth carrying by children, they made no objection to discontinuing the practice. In 1909 in the glass factories of Sunderland women were working in pairs carrying large iron trays piled with flint glass dishes weighing up to 120 pounds, cumbersome as well as heavy to carry. " The difficulty could be overcome by suitable mechanical means, and it is satisfactory that in these cases the danger had only to be pointed

* Annual Report of Chief Inspector, 1903, pp. 221-2.

out to have it remedied, although we were told that for forty years the women had thus been beasts of burden."* In 1912 in the Staffordshire Potteries the employment of men instead of boys for carrying, together with the increased use of trollies, is mentioned as a consequence of the action of the Inspectors in drawing attention to the subject of injurious weight carrying, and particularly to the prohibition in the Employment of Children Act, 1903. In Manchester "making-up" warehouses many instances were found of girls and women carrying pieces of cotton cloth weighing from 60 to 70 pounds, a great strain and a continual grievance; serious cases of overstrain resulting in absences from work, unnoticed by employer, were traced by Women Inspectors visiting their homes. In answer to the employers' plea that the women were themselves to blame, the Inspectors pointed to the systematic laying of pieces weighing 70 pounds by men on the shoulders of women (slight, city and slum dwellers, and undeveloped girls), who filed past the men to receive the cloth delivered by a chute from a room above. Similar and greater overstrain was found by Miss Squire and her staff in Lancashire among weavers lifting loom weights at the back of their looms. The injury caused is "often not noticed until later in life."† Improvements in both these classes of cases were reported in 1913.

Of all the various ways of using a part of the human body in a disproportionate or unsuitable manner to perform an industrial operation for which a mechanical contrivance should be used, I

* Annual Report of Chief Inspector, 1909, p. 147.

† *Ibid.*, 1909, p. 147.

may mention here the one that appears most frequently in my Annual Reports. The "licking of labels" by girls or boys instead of moistening the gum on the labels by pads or a machine was brought to my notice by a thoughtful employer in a country thread mill, in the first year of my service with the Factory Department, as a very undesirable practice specially injurious to the health of young workers. I investigated this practice, and finding it in fact frequent, and associated with signs such as swollen glands in the neck, I reported the matter for further enquiry by the Dangerous Trades Committee. They found that this was a practice not only in thread mills, but also in silk and aerated water industries, and probably in other trades also, and that in a large Lancashire thread mill the tickets for bobbins were almost entirely moistened by twelve full-time young workers, licking up to fifty gross labels, and thirty-five half-timers, licking up to twenty-five gross labels a day, while a woman managed to lick forty-five gross a day. As the firms concerned abandoned the practice in favour of a damper when attention was drawn to the subject, no regulation was recommended, and the Committee merely laid stress on their opinion that such a practice could not but be prejudicial to health, particularly at an age when growth is active and the system requires all its digestive secretions, even if the gum used were perfectly pure. More serious injury might be done if infective organic material or poisons were present on the labels.*

* Final Report of the Departmental Committee on Dangerous Trades, 1899, pp. 31-3 (Cd. 9509).

Many years' pursuit of this subject by the Inspectors showed that the effective cause of the continuance of the undesirable, and sometimes injurious, practice was the pressure for rapid output; under a system of piecework remuneration a young worker could, by use of tongue and saliva, acquire a rapidity exceeding the speed obtained from the use of any available hand-damper. By persistent work the Women Inspectors tracked down factory after factory where the method continued, and got the practice stopped. The last bad instances reported on were by Miss Whitlock, M.B., in 1912, in an Irish mill, where she found girls fixing blue labels to a bronze band wrapped round balls of thread. They had to lick the whole surface of the blue label, and although not continuously engaged on the work, a girl would label as many as 960 balls in a day. They suffered from soreness of lips and tongue and bad taste in the mouth, while a mother seen at home said her daughter had lost her appetite and "failed terribly" while at this work. She took her away from it, and the girl had quite recovered her health when employed as a spinner. Not only did the manager abolish the licking by providing and enforcing use of dampers, he also raised the labellers' piece-rates by one-third. It is a valuable example, for it is not seldom that introduction of improved methods of working may cost the workers more in immediate loss of wages than it is possible for them to afford.* Among the industries other than thread-spooling

* Annual Report of Chief Inspector, 1912, p. 142, and for 1913, p. 90.

where licking was checked by the Inspectors, were packeting of sweets (in gelatine bags closed by licking), siphon-labelling, tin-labelling, and cigar-banding. In 1903 I was able to give an account of a good power-driven machine for punching labels and pasting them on to thread-spools which I had seen that year at work in silk mills in the Grand Duchy of Baden, a health and time-saving machine doing the work very efficiently.*

Accidents causing bodily injury or loss of life, and problems of safety connected with fencing of machinery† moved by mechanical power, and other special safeguards against explosion, escape of steam, falls, etc., involve highly technical questions. In factory industry as a whole they affect male workers in a far higher degree than female workers; in 1920 there were more than thirty times as many fatal accidents to men as to women, and more than nine times as many accidents non-fatal as well as fatal to men as to women.‡ Thus the first concern of the Women Inspectors, lacking as they did at the beginning knowledge and experience in these matters, was to refer risks of accident, observed by them in connection with unfenced machinery, to Men Inspectors in charge of districts. These then took the action or gave the instruction to the occupiers, and we were thus left free for concentration on the urgent questions already touched on, to which we could bring new and indispensable contributions.

* *Ibid.*, 1903, pp. 222-3.

† See explanation in Introduction, p. 12.

‡ The figures are given below in Chapter VI., p. 196.

The Women Inspectors, however, took great interest in complaints made to them by the women of dangers and of accidents actually occurring. They soon gathered useful facts by their own observation, and the interest rapidly grew as they began to see the close connection of accidents with conditions of labour—other than fencing of danger points—including pressure for output, long hours, and very low rates of pay under the piecework system, as well as methods of lighting the factory.

It soon appeared to them probable that the effectual prevention of accidents rested not only on skill in fencing, but on detailed study of conditions, on the one hand, and, on the other hand, on responsible supervision of all conditions by good management in the factories and workshops. The knowledge they steadily acquired, through following up complaints, of the immense suffering and loss to individual workers and through them to national production, by preventible maiming and injury, led them to give increasing time to study of the subject.*

The important amendment of the code governing notice of accidents in the workplace and their investigation by the Inspectorate, that came into operation on January 1, 1896, brought them new opportunities of acquiring information. It became compulsory for every occupier to keep a register of the accidents occurring in the factory or workshop of which notice had to be sent to the Inspector for the district, and to enter particulars in the register regarding such accidents within a week of their

* Annual Reports of the Chief Inspector, 1896, p. 66; 1900, p. 377; 1901, p. 170, etc.

occurrence. Immediate access to this register certainly increased the value of an inspection. It acted as a finger-post to special causes of accidental injury to workers in the particular workplace. Much more important, however, for practical knowledge of broad means of preventing accidents was access to a general review of dominating risks in an industry as a whole. This opportunity came to me and my staff as an unforeseen consequence of the devolution in 1898 upon a Woman Inspector of district charge of a " special " district containing a particularly large number of all kinds of power-driven and hand laundries,* as well as factories and workshops in which the making of wearing apparel was carried on. It was soon discovered that, so far as practical prevention of accidents went, the Inspector in charge of the special district, by receipt of notices of accidents, by thorough investigation of their circumstances and of the complaints of the workers, by conferences with laundry and other engineers and study of safety appliances, largely made up for her initial lack of training as an engineer. Lack of engineering training was not confined to Women Inspectors; and, as laundries first came under the Factory Act after the Women Inspectors were appointed, a special opportunity arose for them of acquiring useful new knowledge which was then available for the whole Factory Department. This opportunity was seized, the sympathies of a considerable number of laundry occupiers and engineers were aroused, and fruitful experiments were rapidly begun in this small special

* Annual Report of Chief Inspector, 1900, pp. 377-9.

district in development of guards for the prevention of extremely painful and frequently maiming accidents—chiefly to fingers, hands, and arms, and largely to young workers—on ironing machinery, wringers, hydro-extractors—in fact, on the most dangerous machines in laundry plant. The comparatively recent development of specialised power-driven machinery in laundries, and the incidence of the most painful accidents on young girl workers, tended to melt away opposition (on the part of occupiers) to the Inspectors' zeal for encouraging early trial of automatically acting guards for preventing such accidents. An ingrained habit of regarding accidents as somewhat unavoidable was not, in laundries, a legacy from the past, nor had it been acquired by the industry, and the presence of women as manageresses and owners (as well as their being the great majority of the workers) led to a ready acceptance of a Woman Inspector as one likely to know something about the subject. The systematic tabulation of classified causes of all serious accidents in laundries soon brought to their notice, further helped to a reasonable outlook on the problems of fencing.

During the first two years of responsibility for this special district, with so many laundries in it, we studied the conditions, the machines, the time, and other circumstances in the occurrence of the accidents, but I soon felt that a wider body of statistical information, from all over the country, was needed to strengthen our demand for use of good guards on the dangerous machines.* I therefore examined

* Annual Report of Chief Inspector, 1902, pp. 162-7.

every report by a certifying surgeon to the Chief Inspector on an accident in a laundry from every part of the United Kingdom, and tabulated these according to source or causation of the injury and according to age and sex of the workers. The results were published in the Annual Report for 1902, and the work of tabulation was thereafter carried on for me by Miss Tracey down to 1914. At first the reporting of the accidents was incomplete, and the total annual number gradually rose from 289 in 1901 to 435 in 1908, after which, in spite of great increase of employment in factory laundries, and in use of dangerous power-driven ironing machinery, the total number of accidents in the industry annually on the whole declined, the average for the five years 1909 to 1913 being 391·4. In all these years the classification of sources of accidents was unchanged, the material risks had been rightly inferred at the outset from close examination of the machines and from investigation of individual accidents. The stress we laid on the value of automatic guards for stopping indrawing rollers (risk arising from feeding all kinds of articles in between the rollers) was justified by the proportionate decline in number and severity of these accidents. Probably in few other industries were accidents so predominantly caused by definite danger points in power-driven machines. Out of a total during twelve years of 4,235 accidents reported on by certifying surgeons (including scalds and burns, which numbered 379), 2,648 were caused by indrawing rollers of ironing and wringing machines, and an abnormally high proportion affected girls under eighteen years of

age—who were so largely employed in machine-ironing.* These facts were brought out at a conference of the Department with the laundry trade in 1910, at an interesting exhibition of laundry machinery, where the latest developments in machinery and guards could be studied. After this conference a memorandum standardising fencing of laundry machinery was issued to the trade.† Definite steps in this direction had been made possible by the concentrated work of the Women Inspectors on the industry, first when they were definitely instructed to follow up fencing in laundries throughout the kingdom, and secondly when, from 1908, all accidents affecting women and girls in laundries were referred to the Senior Women Inspectors in the various divisions for investigation and the necessary action.

The industry was not one in which the general risks of accident were high; the total accidents and the accident rate were small compared with those of other industries. Without such concentrated team-work on the question, the predominant risks would probably long have escaped effective observation and control, and the painful and maiming accidents to many young girls would have been obscured by the greater roll of accidents in other industries; they would have failed to receive the effectual check that they in fact did receive in

* Annual Report of Chief Inspector, 1913, pp. 82-3.

† Published as Form 414, price 1d.: "Memorandum on Fencing of Machinery and Prevention of Accidents in Laundries." Second edition issued in 1913. No revision has been found necessary since that date.

consequence of the assignment to this branch of the Inspectorate of a special opportunity and responsibility in relation to the trade. It is an interesting illustration of the value of special work on selected trades, and raises the question whether such special work is not an adjunct that is indispensable for efficiency in a system of administration by area or territorial districts.

Important prosecutions were taken from time to time, and repeatedly penal compensation was obtained and applied to the benefit of workers injured through neglect of the occupier to provide or maintain good guards. In 1913 an unusually interesting prosecution, of importance for Scottish laundry workers, was taken by the late Miss Vines in the Edinburgh Sheriff Court, for a failure to fence securely the intake of a calender in consequence of which neglect a young girl had lost the use of her hand.* It was keenly contested, and Miss Vines's account of the hearing may well be remembered here:

"A plea of 'not guilty' was tendered, and evidence was led at considerable length—I had eleven witnesses—as to the question of secure fencing. At the time of the accident the feed of the calender was fenced only by a fixed bar guard, while our contention was as to the necessity of the provision of an automatic guard. We had expert evidence from two witnesses, one the member of a large firm of laundry engineers, the other Miss Perry, whose evidence, owing to her university degree in engineering, carried considerable weight. The advocate for the respondents also had two expert witnesses. In my argument

* Annual Report of Chief Inspector, 1913, pp. 84 and 110.

I referred to the case of Schofield *v.* Schunk (1855) 24 L. T. (o.s.), 253, in which it is laid down that the machinery must be fenced according to the best method known at the time, not merely in the manner usual in the best regulated factories in the district. After a hearing of some hours the Sheriff convicted, saying that he thought it clear from the evidence that the fence consisting of a fixed bar was not of a satisfactory nature, and that an improved type was now largely used."

A similar responsibility and opportunity arose in the wholesale clothing trades, but the accident risks were far smaller and chiefly due to "transmission machinery"—*e.g.*, shafting, driving bands and pulleys to sewing machines, found also in many other trades—these risks being already well known. The one really new contribution there made by the studies of the Women Inspectors lay in needle-puncturing accidents with septic results, from the use of power-driven sewing machines driven at a very high speed, 2,000 to 3,000 stitches a minute. Analysis of reported accidents showed that in 1907 35 per cent. of the total accidents to women and girls in clothing factories arose from this cause, and of these not far short of one-fifth resulted in septic poisoning and consequent great loss of time. Often the needle has to be removed surgically, and sometimes X-rays applied. A needle may enter the finger several times before the hand can be withdrawn, and serious injury sometimes results. So far no guard had been devised to prevent these accidents. Next year over 40 per cent. of the accidents to women and girls in clothing factories were due to this cause, and in relation to these and

other injuries the importance of skilled first aid was brought out. In 1909 again the very great loss of working time and health through these accidents, at first classed as "slight," was illustrated, and the extra urgency of first aid where invention of preventive safeguards against the accidents was still lacking was further pressed home. In one large clothing factory seven out of twelve accidents were of this nature, and in even the slightest of them the workers had been absent from work several weeks.* Enquiry of a systematic kind was made into the arrangements provided by the employers for rendering first aid at the works from this time on by the Women Inspectors—not only when investigating these, but all kinds of accidents. It was found that the very enquiry and the recording of results on the point stimulated employers already doing good work in this direction, and that it aroused others to a new interest in the matter. Miss Whitlock's investigations showed how greatly lack of knowledge of first aid increased suffering to the injured person. For example, "a child's head was badly scalded with boiling starch, and the wound made worse by the forewoman immediately bathing it in cold water. When a young woman was scalped in a clothing factory, time was lost in getting her attended to, for no one knew the quickest way in which to get in touch with the ambulance authorities; neither did

* By 1911 the attention directed to the matter at last produced "an apparently satisfactory finger guard for the needle," and in 1912 two more guards were devised. Such guards had their main effect where young machinists were trained to their use from the beginning. For adult trained workers their effectiveness was slight.

anyone think of removing the scalp from the overhead shafting until an hour after the accident, so that by the time it arrived at the infirmary it was too cold to treat in the usual way in such cases."*

Tin cutting, pen making, metallic capsule making, bottle washing, and many other processes furnished for our observation cases of septic poisoning, following relatively slight accidents, which strengthened our appeal for systematic development of first aid in industry. It was wartime pressure for output that ultimately clinched our argument as to its value from the standpoint of production as well as of humanity.

One example out of many may be cited to illustrate how guards preventing accidents were secured systematically on a machine when its danger was brought to our notice. Teazle-brushing machines in hosiery factories thus arrested the attention of Miss Squire and Miss Tracey almost simultaneously. Miss Squire was interested in complaints of dust, Miss Tracey was engaged in tabulating accidents affecting women and girls in the hosiery trade for my information. The former saw the points of danger apparent in the machine which was new to her, and heard of severe accidents from the indrawing teazle-covered rollers for the brushing of hosiery. Miss Tracey presented the fact that seven out of the fourteen reported accidents from this machine in 1906 were "severe." Guards were asked for through the District Inspector, and in 1909 I was glad to see that accidents had been consequently reduced to three for the year.†

* Annual Report of Chief Inspector, 1909, p. 142.

† *Ibid.*, 1906, pp. 207-8, and 1909, p. 140.

CHAPTER V

EMPLOYMENT OF MOTHERS; YOUNG WORKERS; CHARITABLE INSTITUTIONS

"Every wise woman buildeth her house."

"Give your women economic freedom, assure them access to the sources of culture and you can safely leave eugenic experimentation to them" ("Interpretations and Forecasts," by Victor Branford, 1914).

HITHERTO this survey of women's life in the factory and workshop has simply accepted the fact of productive labour by women and its clear social and economic necessity. While admitting the existence of differences and handicaps, physiological and social, that in part distinguish them from male industrial workers, we have only, in one instance, touched on the influence of marriage and maternity on their employment. The sinister secondary effects of lead poisoning on maternal functions inevitably raised question of factors that, in a civilised community, must place certain limits or conditions on complete liberty of women's employment in factory production as hitherto carried on. This, already long recognised in the United Kingdom in regulations excluding women and young persons from some of the most dangerous lead processes, has been followed or extended in other industrial countries since the Washington Convention.

No one will deny, said the Report of the Women's Employment Committee, 1919, that "woman should be guarded from strain, from accident and racial poison, to a greater degree than man is guarded," and that report fairly indicated standards and tests of suitability in occupations for women.

In this present chapter we pass from the general human considerations controlling industrial conditions over to special groups of persons, where the "human machine" to be safeguarded can least of all be regarded simply as an economic, producing unit. Here the interest of the community as well as of the individual requires consideration from a new angle of vision.

Children, the earliest objects of humanitarian aims in the factory system, came first under a Factory Act in 1802 in certain textile factories; adult women first in 1844. Not until 1891 (after the Berlin Conference in 1890) was any provision whatever made in this country for obviating the necessity of employment of a woman too early after childbirth —in a factory system such as that we have been considering in previous chapters. And then it came only in the form of a prohibition of employment: "An occupier of a factory or workshop shall not knowingly allow a woman to be employed therein within four weeks after she has given birth to a child."* Effects, not causes, seem alone to have been held in view; what was to become of the woman, without other resources, seeking employment at such a time, was left to be sufficiently disclosed by the

* Factory Act, 1891, sect. 17; later sect. 61 of the Act of 1901.

Women Factory Inspectors, who from 1896 onwards tried to give effect to the prohibition by warnings and prosecutions of the occupier so far as he could be shown to be legally responsible for infringements.

Inmates of charitable and reformatory institutions, engaged in production or manual labour of the nature covered by the Factory Acts and not already under Government inspection (as in workhouses, prisons, certified homes, etc.), first seem to have come, somewhat accidentally, under serious consideration in connection with these Acts through proposals to include laundries within their scope. For laundry work was by far the most general industrial occupation in charitable and reformatory institutions—where the work was done not for the institution itself but for outside clients, although not carried on by way of trade, and where the inmates were not working under a contract of service or apprenticeship. Occupiers of ordinary commercial laundries were willing to be included within the Act only if these institutions were also included. The opposition of the institutions was, however, sufficient to secure their exclusion from the Act of 1895, which in some degree covered commercial laundries; they remained outside until partially brought in by the Act of 1907, after we had for some years inspected convent laundries on a voluntary basis. Opposition of the managers melted away steadily, as the advantages of friendly advisory inspections were experienced.

For all but the last of these three classes of specially protected workers, the legal or the administrative position has substantially changed at the close of the

period 1893 to 1921. And most of all has it changed in the care of child-bearing women employed in industry, who were before 1911 completely dependent on the Woman Factory Inspector for disclosure of evidence on their position. The change in the administrative point of view is most quickly realised when one recalls the fact that responsibility for applying the prohibition of employment in factories and workshops of women after childbirth has in 1921 been transferred from the Home Office to the Ministry of Health by Order of His Majesty in Council. It is thus formally recognised as a " matter affecting and incidental to the health of the people."

The cases of employment within four weeks of childbirth were frequent in our experience. As it was generally extreme poverty or desertion or illness of the husband that drove mothers back to work, and the prohibition was well known (being included in the official abstract of the Acts affixed in the workplace), they would in some way conceal the date of birth from the occupier or manager, or sometimes change the place of employment. Thus in comparatively few instances could any legal action be taken at all; even where it could, the painful dilemma of the suffering woman became evident.

The first case taken into court under Section 17 of 1891 was in the year 1897, by Miss Squire. It was a clear case for testing the effect of the section, and it revealed much. The mother, working in a textile mill, had been sent for by the foreman, who was short of workers, on the ninth day after her confinement, although he had been informed of

the reason of her absence on the day she left. Although she made some attempt to screen her employers when called as a witness, she was dismissed from their employment, after they had been convicted and fined. She obtained employment from one of the magistrates soon after he had heard the case, and this relieved her immediate need. The effect of this dismissal on the minds of the other workers remained.*

In 1898 old and new difficulties attending the application of this section again made action difficult or impossible. A laundry visited on a complaint of infringement of the section yielded only the information that the woman was at home, the regulation well known, and "as soon as it was permissible she would return to work." The Inspector, wishing to make sure of all the facts, "went straightway to see the woman in her home, and found her in the act of doing heavy washing for the laundry in question." The occupier was only legally responsible for knowingly employing the woman in his laundry within four weeks of childbirth, accordingly he had "sent the work to be done in the home. The laundry was clean and the surroundings . . . in point of fatigue-saving appliances incomparably superior" to those in which the woman was found. "Her husband was a labourer, she had four living children, and the entire family inhabited two rooms; the woman was washing over a tub raised on two stools in one of the rooms, a small paved and drained yard lay at the back; it was a rainy day, and she had pulled the tub into

* Annual Report of Chief Inspector, 1897, pp. 96 and 107.

the room to be under cover from the wet; she dragged it into the yard to empty when needful."* More often the difficulty of taking action turned on the impossibility of proving knowledge of facts on the part of the occupier, a knowledge which in such a matter it was only natural he should avoid. In any case it was shortly discovered that a young mother of sixteen or seventeen was not covered by the section, being not a "woman," as defined in the Act (*i.e.*, a person of eighteen years and over), but a "young person." These enquiries soon drew my attention to the high rate of infant mortality in districts where women were largely employed in heavy labouring work, such as brick making in the Stourbridge area, and the galvanised bucket industry in the Lye district, and some enquiries were made to learn how far such work affected infant life.

In 1902 a conviction, with penalty, was again secured in one of the instances of re-employment of a woman within four weeks of childbirth. In another case of re-employment—this time within a fortnight of childbirth—in a wholesale clothing factory, although a deplorable state of affairs was disclosed, action was impossible owing to the entire lack of evidence of responsibility for supervision anywhere in the place. The Inspector took occasion to press home the need of superintendence by a competent woman, which in this case was promised by the employer. She found that young single women going to the workhouse for a confinement were usually discharged at the end of a fortnight if their state of health made it possible, with the

* Annual Report of Chief Inspector, 1898, p. 181.

result that their re-employment within three weeks was practically unavoidable.

The whole position was, as Miss Squire put it in 1897, that "Section 17 of 1891, although of so great importance to the community no less than the individual, must remain for the most part a dead letter owing to the difficulty of proving the employer's knowledge of all the circumstances, as well as for other obvious reasons."*

A welcome opportunity for wider dissemination of knowledge and understanding of the whole problem of employment of mothers arose through the appointment of the inter-Departmental Committee on Physical Deterioration in September, 1903. An invitation was extended to me to give oral evidence on the effects of factory and workshop employment on the health of women and girls, which I did at some length. Fuller information was sought by the Committee on the effect of industrial employment of mothers both on themselves and their infants. By the help of my colleagues, I set intensive study of the matter on foot in three separate and distinctive industrial centres for women's employment: in Dundee (jute trade), in Lancashire, in Preston, Burnley, and Blackburn (cotton trade), in the Staffordshire Potteries, in Hanley and Longton (earthenware and china trade). Two of these towns, Dundee and Preston, were particularly characterised by an absence of employment for men of the same class as the women so largely employed. In all the centres of study infantile mortality was high, although not higher

* *Ibid.*, 1897, p. 107.

than rates to be found elsewhere—*e.g.*, in mining centres where mothers are not industrially employed. Widely varying conditions in local sanitation and housing obtained in these towns. Wide variation also was present in nature of the industrial work done by the women, speed and pressure of work, length of daily hours, presence of dust or lead in the processes, and other circumstances.

The main effect of this enquiry, with the following up of many cases of re-employment of mothers after childbirth, was to establish more clearly than ever before that such re-employment was not, as had hitherto been often alleged, largely caused by the women's preference for factory over domestic life, but by the pressure of poverty, or actual want, on the mothers. Much help was given by officers of the local health authorities in making the enquiry.

In 1904 I presented to the Committee a memorandum on "Employment of Mothers in Factories and Workshops," containing full details, and what the Committee described as a "wealth of information" from the three Inspectors, Miss Paterson, Miss Squire, and Miss Martindale, who had carried out my scheme of enquiry. The Committee gave full publicity to the results in the memorandum, including it as an appendix in their report, besides favourably commenting on its conclusions. They further definitely recommended fuller investigation, on the lines suggested, into infant mortality rates; locally, for particular areas in industrial towns, and into general infant mortality rates for selected industries throughout the country, and the speci-

fying of the occupation of all mothers (married or unmarried) in the Registrar-General's records. They also recommended a strengthening of the prohibition of employment within four weeks, either by throwing onus of proof on the employer or by requiring a medical certificate from the mother.

The Committee attached great importance to observations of the Inspectors in the memorandum on the stress and strain involved, through many existing conditions in factory life, "in the employment of women from girlhood, all through married life, and through child-bearing"; they specially noted the fact that when decreasing physical capacity brought the prospective mother "at least some relief at the hands of the manager of the mill and she is sent away," it is often only "to take up the equally unsuitable occupation of charwoman or scrubber." No general notion had then arisen, or at least it had not been publicly expressed, that national responsibility for release of child-bearing women from wage-paid employment should be recognised by the provision of some form of maintenance at the time of their greatest need. The Committee, on this financial point, only included in their recommendations a suggestion that "charitable efforts in manufacturing towns might be directed towards endowing and maintaining insurance organisations to which employees, assisted by voluntary subscriptions, could contribute while in work, and from which they might receive assistance during a confinement and afterwards." I had pointed, in my memorandum, to the experience at Mulhouse in Alsace that organisation of a maternity

fund by manufacturers, to which both employer and employed contributed, had resulted in a reduction of infant mortality by half. I had also suggested that "whether by local trade effort, or larger national effort, provident insurance of the kind might be expected in time to eliminate the cases where infant lives are lost . . . and needless suffering caused to hard-working, valuable mothers by total absence of skilled attendance." I had also laid stress on the need for fundamental reorganisation of antiquated charities, in harmony "with increased scientific knowledge," and with the "changed economic conditions of women's lives."

On this side the earliest help that came was, of course, through the National Health Insurance Act of 1911. In 1904, and onwards down to 1913, Women Factory Inspectors continued to gather and to present information on this subject, which never seemed to them less poignant in the details, though it took seven years to issue in any provision for the sufferers. A summary of all that we learned, as Miss H. F. Cohen said when she prepared such a summary from my Annual Reports for the Women's Employment Committee in 1919, "gives only a faint idea of the state of things—it is only the cumulative effect of instance after instance which enables one to realise the impotence of the law."

In 1904, in twenty-one cases of employment within four weeks of childbirth investigated in Scotland by two Women Inspectors, only three were found suitable for proceedings, and a conviction

was recorded in only one. "The others were dismissed, one without trial, on the ground that a Limited Liability Company could not be charged with the offence; the other on the ground that the woman was not "knowingly" employed, although it was proved that the reason for leaving the mill was known to the foreman, who re-engaged her without enquiry. In the majority of cases the woman did not return to the same factory as that in which she worked before confinement." In a very bad case of re-employment at one and the same works the woman, working under a contractor, was employed in very laborious work, the setting and drawing of kilns. The manager of the works ordered the contractor to send her home, as she was obviously not in a fit condition to do the work. Ten days after the child's birth she was re-engaged by the manager who had ordered her to be sent home, and employed at the same place in loading wheelbarrows at the canal bank and other work. "Sixteen days after its birth the child died. . . . The occupier, who goes daily to the works, endeavoured to shift the legal responsibility on to the manager, the latter on to the contractor. Until the Woman Inspector put the matter before them in what was evidently a new light, it had not occurred to anyone that it was worth consideration, or that even a legal, let alone a moral responsibility, rested on anyone."* In Lancashire, in the same year, one out of many cases of too early re-employment was taken into court. The fact that the mother was back at her loom fourteen days after

* Annual Report of Chief Inspector, 1904, pp. 273-4.

the birth of the child was proved; it was also proved that the manager and tackler, as well as her fellow-workers, knew the reason for the weaver's absence, but the case was dismissed (after long and earnest deliberation by the magistrate), because the manager had not had the simple enquiry made as to the age of the child, and therefore did not "knowingly" allow her to be employed. In this case the reason for the return was poverty, the husband being out of work, and the woman had been alone and untended at the birth of her child. The futility of the unamended law for the protection of industrial mothers against pressure of either poverty or negligence was more than established.

"Some of the most pathetic incidents came to one's knowledge," says Miss Paterson, in some notes written at my request for this book, "in the administration of the section which requires absence of mothers from work for the short period of four weeks after the birth of a child, for the poverty or the fear of permanent loss of employment which drives her to cut short her time for recovery generally means that she is indeed in straits. Customs vary in different parts of the country, and it is Scotland that is in my mind chiefly when the figure comes before me of the work-worn woman who appeared to have a choice to make whether she would go out to work or stay at home and work, but who had in reality no alternative but to earn, at once, what she could. 'If he could bring in a pound a week constant,' said the wife of an unskilled labourer to me, 'I would never think of going out,' and I believe this represents the feeling of the Scottish married women, though they would not all put their minimum at so modest a figure."

In the returns of persons employed in factories and workshops for 1907 the first attempt was made to obtain official figures to show the extent of employment of married women in industry. The information could only be obtained by voluntary returns, which were in many cases not forthcoming. On the figures so obtained it appeared that in textile factories 24·1 per cent. were married, 71·8 per cent. unmarried, and 4·1 per cent. widowed; in non-textile factories 16·3 per cent. were married, 79·3 per cent. unmarried, and 4·4 per cent. widowed. A high proportion of power-driven laundries made the return, and in these 28 per cent. of the women were married.

The worst cases of too early employment of mothers did not, however, necessarily appear in the industries that were most characteristically women's, but rather in poor or underpaid industries and in towns or districts where women were largely employed without a sufficient balance of men's staple industries to enable the husband and father to be the main breadwinner of the family. Any high degree of unemployment for the latter, of course, immediately affected the security of the mother's support at the time of child-bearing. Many of the worst examples of too early employment after childbirth came primarily from that cause.

"I know," wrote Miss Paterson in 1907, "of no more tragic figure than that of the toil-worn woman striving . . . to do the work of two persons with, as her background, the unemployed or insufficiently employed man . . . desolate and oppressed are the words which seem then to describe her the best."*

* Annual Report of Chief Inspector, 1907, p. 184.

Some of the very worst examples came to our knowledge in the five years preceding the modest relief that came for maternity through the National Health Insurance Act of 1911. In that year, at the Congress of the Royal Sanitary Institute at Belfast, Miss Martindale gave an address on Hygiene and Industrial Employment, in which she stated that in that city she had "come across women returning to work of a hard manual nature, entailing hours of standing, within ten days, and even four days of their confinement." She was convinced that "no woman would return to work within the month if it were not poverty which compelled her to do so. As one poor tired woman remarked, 'Could I remain away from work for more than a fortnight with five children under six years of age starving at home?'" The emigration of men in Ireland often threw the burden of breadwinning on to the women.

To those who wish to understand, even partially, the extent of suffering and injury endured by poor working mothers before any national attempt was made to help them at the time of childbirth, I can only say that the subject must be further studied in the section of my Annual Reports from 1907 to 1911 dealing with employment of women before and after childbirth.* The monotonous recital, year after year, of facts revealed by complaints investigated can alone give any idea of the matter. One characteristic example must close the recital here. The occupier of the factory had not "know-

* See Annual Report of the Chief Inspector for the years named.

ingly" re-employed the mother within the four weeks' limit; the woman's husband, a carter, had been out of work seven weeks before the confinement, and the Guardians gave relief in money and kind for fourteen days after the birth. The third week they refused an application for continuance of the relief, and the woman returned to her employment —her husband being still workless. The Inspector asked the health visitor to interest herself in the matter and secure assistance if possible for the woman. Section 61 of the Act of 1901 only took effect generally by bringing to our knowledge facts that might otherwise be overlooked, and prevented inconsiderate employers from directly requiring women to return to work too soon after the birth of a child.* Ultimately, when due care has been secured for the poorest child-bearing woman, the tale of their past suffering and neglect will seem a terrible and incredible thing.

Let us now turn to the young worker in industry. Strong though the appeal of this subject was to the Women Inspectors—taking much of their time and thought—in a sense it lies outside the limits of this book, and it is far too great for adequate notice in a fraction of a chapter. A few illustrations of ways in which we came in touch with industrial employment of children must suffice. "Children in the factory" is a thought that irresistibly carries memory back to tragic past wrongdoing, in cruel overstrain and misuse of children's forces that no one of our race or nationality can cheerfully recall to mind. Yet we are bidden by the foremost

* See Annual Report of Chief Inspector, 1909, p. 159.

historian of the factory system, Mr. Whately Cooke-Taylor, never to suffer the story to be forgotten lest its pitiful warnings against the blinding power of false doctrine should also die out.*

The earliest legal remedies for the worst evils of child labour under the factory system were threshed out in the first half of the nineteenth century by English men themselves, long before it was imaginable that women might enter the Civil Service and help as Factory Inspectors to apply these remedies. It was, indeed, through the sufferings of little children that the whole humanitarian movement for reform of factory life by law and administrative action began, and that it found its chance to grow against many and powerful adversaries, as may be seen in the life of Anthony Ashley Cooper, Lord Shaftesbury.

The sacrifice of the young workers made the first opening through the outer framework or crust of society, built up as it had been in the nineteenth century on a basis of "machinery and steam."† The children had been drawn, as the children were drawn by the Pied Piper,

> "A wondrous portal opened wide
> As if a cavern were suddenly hollowed;
> And the Piper advanced and the children followed."

They had been drawn into the factories as helpless dependents of the machine for the purely economic reasons that were then generally deemed valid and all-sufficient. In turn, they furnished the most

* See above, Chapter II., p. 57.

† "Economic Annals of the Nineteenth Century," by Professor William Stuart, 1910, Preface, p. vii.

unanswerable argument against the doctrine of *laissez faire*, and thus involuntarily helped to bring about its discredit.

The main provisions in the Factory Acts for protection of the young worker had been framed, and the very worst evils repressed, when Women Inspectors entered the service in the last decade of the "economic" century. Yet much remained to be done, as has already been seen in certain examples of hardness and barbarity, particularly in Chapter II. The very institution of the "half-time system," which first came as an enlightened practical remedy for excessively long daily hours, and as the original provision for compulsory elementary education, had in our early official days begun to be more than suspected as an evil in itself among reformers. It lingered until the close of the War, for its prestige had been great; it had grown into the very structure of textile industries; and it had secured at least that whatever schooling a factory child had was given to it in the daytime. Many pages scattered through Annual Reports of the Chief Inspector record the injurious effects on health (as observed by Women Inspectors) following on the attendance of young workers at night school permitted by some education authorities in cases of family poverty, as a condition of allowing the young worker of thirteen and fourteen to work full time during the day.

This latter point came out so markedly because of the close attention that was given by myself and my staff to applying the provisions for securing a reasonable degree of physical fitness in young workers in factories. We did all in our power to

bring home to parents as well as employers that examination by the certifying surgeon of the child for half time or young person for full time employment, as to their physical fitness for " working daily for the time allowed by law in the factory," was a serious, not a merely formal, matter. We freely used our powers as Inspectors to suspend a child or young person for re-examination, wherever it appeared to us that she was unfit by " disease or bodily infirmity " for the daily work during the legal hours. Out of this came the evidence that led to strengthening of the law by giving to the certifying surgeon power to examine any process, and to qualify the certificate by conditions as to the work on which a child or young person is to be employed. The younger the child the greater our concern for all this, and from the first we worked in close contact with the teachers in the schools attended by half-timers, whose age or delicacy called for our enquiry. Incredibly small and baby-like were some of the eleven-year-old children still lawfully employed in factories up to the year 1899. A few ten-year-old children were still lawfully employed in 1893 when the first Women Inspectors began their work.* In some notes sent me by Miss Paterson at the close of 1921, written for this book, she says:

* The Factory Act, 1891, sect. 18, raised the age of entry from ten to eleven years, but the change took effect only in January, 1893, and even then not for any children lawfully employed before January 1. The age was raised to twelve by the Elementary Education Act Amendment Act, 1899, in England and Wales. The Act of 1901 made the obligation general.

"Amongst the changes in the law during my official service few were so completely satisfactory as those which have contributed to the passing of the half-timers. Each advance of a year in the age for entering on employment was accompanied by gloomy forebodings of the result to industry of preventing a child from acquiring facility while its fingers were still supple—as if a non-wage-earning child sat with hands folded in inaction—and (by some people) of the effects on character of too much leisure in youth. A well-known sheriff added to his reluctant convictions of several firms for illegal employment of children an exhortation to me to consider carefully what I was doing before bringing more such cases to this court. In his opinion I was doing much to fill the place with young criminals who would have me to thank to some extent for their ruin."

Some remarkably enlightening information came out of enquiries made by Miss Paterson in order to find an answer to the question, "What becomes of young workers rejected by the certifying surgeon in a factory as physically unfit for the work?" It was carried on, as much of our work was, in co-operation with the certifying surgeon. In 1900 79 cases of rejection were followed up to the child's home, 56 having been rejected as under age, 11 for weakness or disease of the eyes, 6 for skin disease, 1 for deficient intelligence, and 5 for personation of another older child. It became clear that the children did not go back to school, that they tended to go either into casual employment outside the factory system, or into a workshop where the certificates were not required and where a register need not be kept, that the work they went to was

as hard as, or harder than, that for which they were rejected, and that the children lived under pressure of circumstances impossible for them to combat—sometimes selfishness, oftener the extreme poverty of parents, sometimes carelessness or indifference of employers. This information was embodied in evidence I gave to the Departmental Committee on Employment of School Children in 1901,* and thus fortunately became promptly utilised. The interest of the general community in the matter became evident, and not only from the standpoint of future efficiency of the child; for example, it was ascertained in one case that a child rejected for a contagious skin disease went into a process not under the Factory Act—namely, the picking and cleaning of fruit for making preserves. The close enquiry into the reasons for rejection brought out again very clearly what I had pressed forward several years earlier, the unsatisfactoriness of the conditions of publicity, noise, etc., under which the certifying surgeons had to make their examination of the young worker in the factory and the handicap they felt in trying to make it sufficiently thorough.† The uselessness of a perfunctory examination became the clearer as one saw more of the wide range of possible occupations in a large factory. It was recommended on the results of this enquiry that better arrangements should be made for the examination, that the surgeon should have power to qualify his certificate, and that enquiry should

* Cd. 849.

† Annual Reports of Chief Inspector, 1896, p. 69; for 1900, p. 396; for 1902, p. 184.

be systematically made as to what became of a rejected young worker. Miss Squire had two years earlier laid bare, in vivid words, the narrow basis on which a surgeon then had power to reject.

"The certificates must by law be granted if the child or young person is of the proper age, and is not 'incapacitated by disease or bodily infirmity for working daily for the time allowed by law in the factory named.' The number of girls and boys so incapacitated is small; is the number of those physically unfit for the employment to which they are set also small? Certainly appearances in the factories are often against such a conclusion. Many a factory is a town in itself; the processes of manufacture carried on within its walls are as different in character and conditions as they can be; a boy or girl is certified as physically fit for them all. Yet it is conceivable that a child or young person may be physically fit for one department or process and physically unfit for another; quite fit, for example, in a silk mill for winding, quite unfit for the intense heat of the gassing room; quite fit in steel pen works for sorting or stamping, quite unfit for the strained position and dust-laden atmosphere of the grinding shop; quite fit in fancy box factories for pasting on the paper, quite unfit for waiting on the glue room by carrying up and down heavy pails; or physically strong for rough work, but with eyes unfit for strained attention on work requiring close application. Could not certifying surgeons have power to exclude from a certificate a specified department or process, or to name in the certificate one department or process only, and for this purpose have power of entry to factories in order to see the work in relation to the child? In a district known to me where both these powers are, with the co-operation of occupiers, exercised,

no one regards a certificate of fitness as an empty form; a dead system has been galvanised into life.

"I have often thought whether the doctor who saw the little, delicate, narrow-chested girl in the office, and was 'satisfied that she was not incapacitated by disease or bodily infirmity for working' for the legal time, were to see her as I see her in the stress and strain of work toiling up flights of stairs with a load I cannot lift, streaming with perspiration in steam and heat, bent double straining over minute work, he would have been able to certify her as physically fit for such employment had such a certificate been requisite. Having regard to eyesight alone, what misery entailed by impaired vision might not be spared by the exercise of a judicious control over the kind of employment permitted to boys and girls with defective eyes."

Frequently, when it was necessary for an Inspector to suspend a child or young person from work until re-examined by the certifying surgeon, or to prosecute an employer for neglect to obtain a certificate for the young worker, it was found that the occupation itself had increased some constitutional delicacy or weakness.* In such cases the young worker had to be sent for medical treatment. Many prosecutions were taken for entire failure to obtain the certificate, but so frequent was the neglect that most of them were taken into court only after warning, and on account of unhygienic conditions to which the young workers were exposed.

* Such as delicate eyes of girls of twelve and fourteen becoming inflamed and suffering from conjunctivitis when exposed to dust from rabbit skins dressed with mercury solution in fur-pulling works. See Annual Report of Chief Inspector, 1899, pp. 273-4.

Heavy weight carrying and other kinds of injury have been dealt with as regards workers generally in the chapter on dangerous trades. Here I must record the strong impression early made on the Women Inspectors by the liability of children to suffer overstrain of many kinds in the factory, simply because of the general lack of sufficient superintendence by someone whose duty it was to protect them, and because of their own eagerness and readiness for effort. It was, as Miss Paterson said, "almost incredible the extent to which details connected with employment are allowed to be nobody's business."

"The use of heavy irons, carrying or dragging of heavy loads, continuous strain of one kind or another, is just as often as not the result of that want of thought on the part of responsible persons which occasions, in all circumstances of life, so much misery, and which it is so hard to overcome. . . . It was my duty early in the year to take proceedings against a firm in whose factory I found a little girl engaged in work for which she appeared to me to be physically unfit. I served a notice on the firm requiring them to discontinue her employment unless the certifying surgeon, on a re-examination, found that she was fit for it. On a revisit I found her still there, neither dismissed nor re-examined. It would have been easy for the firm to have replaced her ten times over from the immediate vicinity of the factory, so that there was no reason for the disregard of the instructions except carelessness and indifference."*

As time went on, and especially after the certifying surgeons had the power given by the Factory

* Annual Report of Chief Inspector, 1901, pp. 186-7.

Act of 1901 to attach conditions to certificates of fitness for individual girls and boys, interest grew among employers and managers in setting the young workers on to more suitable work under more favourable circumstances. They realised the possibilities for good in the examination as they had not done under the past more formal methods. In cases where young persons were employed in very dusty processes—bronzing in printing factories, shaking up and cleaning feathers in quilt and cushion works—those who complained of ill effects were found to be "mouth-breathers" on account of nasal obstruction, and by arrangement with the occupiers these were removed to non-dusty processes.* In potteries where a good many prosecutions had to be taken for neglect to obtain certificates of fitness—so necessary for the heavy work to be done there by young workers—good effects were particularly seen in new potteries. At one, notices were distributed by the occupier at intervals to all the sub-employers in the different departments† reminding them of their duty immediately to report the engagement of workers under eighteen; in another a clerk was set in official charge of the general register and health register with the duty of regularly ascertaining whether the prescribed examination had been carefully carried out. Enquiries were systematically made into reasons for

* Annual Report of Chief Inspector, 1905, pp. 319-20.

† In this ancient industry the feature of sub-employment by working potters obtained, and gave a distinctive quality to the workplace as compared with that of other more modern industries.

and results of rejection, and an extensive report on such activities may be read in the Annual Report for 1905. Official visits to medical officers of health as well as conferences with certifying surgeons in the special question of rejections for uncleanliness led to development of co-operation between the different authorities. By 1913 co-operation with education authorities and the juvenile labour exchange was added. Great advance in the care of children was then brought about by co-operation between the school medical officer and the certifying surgeon. When a child, known to have a physical defect or weakness, goes from school to the factory, the certifying surgeon is notified, and he subjects the child to a searching examination.

Careful investigation in earlier years of the certificates of school attendance of half-timers showed the attendance to be good. The possibility of securing a labour certificate at thirteen years of age for full-time employment had a good deal to do with this in places where the certificate was granted on a high standard of attendance. This meant, said Miss Paterson:

"Hard work at school in the years before the child is twelve years of age . . . and between school work and factory work the Lancashire full-timer is often pitifully small, thin, and nervous. In a Scotch cotton mill I noticed a little girl, twelve years old, exempted from day school on condition of attending a night school, and working full time in the mill on the ground that her work was not employment within the Act. She had been examined by the certifying surgeon and passed for

'messages only, not to work in the mill,' and carrying messages upstairs and downstairs from one department to another was her work from 6 a.m. till 6 p.m. Her home was not far from the mill, but the night school which she attended from 7 p.m. to 9 p.m. was a mile from her home, and altogether her day's work was one that few people double her age would willingly undertake."*

And yet, in spite of much serious, heedless overstrain of children and of deplorable illegal employment in Great Britain in our time, Ireland, and particularly Belfast, exceeded all other parts of the United Kingdom in what must be described as exploitation of child labour. Economic and political conditions there, accompanied by backwardness in education, no doubt retarded a general improvement in public appreciation of the vital interest of the community in conservation of the strength and care of the natural development of the child. And it was the additional misfortune of the Irish child that the conditions of the chief industry—flax—in its many dusty and humid processes, inevitably contained much that was undesirable for the physical well-being of the young growing worker.

"Public opinion," said Miss Martindale in 1908, "on this subject of child labour in Ireland lags far behind that in Great Britain.† I have never so vividly realised this as when I prosecuted a firm on behalf of five little girls who had been employed

* Annual Report of Chief Inspector, 1905, p. 314.

† She had been working there and presenting living pictures of conditions in industry for several years, and the accompanying Annual Report for 1906 should be specially studied to see what she did.

full time in fairly strenuous work. Three of them were twelve years of age, and had been employed full time since they were nine or ten years of age. It is impossible to describe the antagonism aroused in the whole district by this prosecution . . . and the case was dismissed on a small technical point. . . . Several cases of illegal employment . . . could not have occurred except for public opinion in that district. . . . In a flax scutching mill one morning I found a little girl aged twelve years 'stricking' flax with a rapidity and dexterity which showed considerable practice. My enquiries met with the most bare-faced untruths. . . . I was told that the child was at the mill for no other purpose than bringing tea to the workers. On visiting the school . . . I was told that this little girl and her sister, aged ten and a half years, worked alternate weeks at the scutching mill, and were employed there from 8 a.m. to 8 p.m. on every week day, including Saturday. I could not hear of any steps having been taken by the teacher or managers to stop this obviously illegal employment. In another factory I found a little girl of thirteen years working full time with a certificate which showed clearly she was only in Standard IV., and of the illegality of the employment the teacher must have been aware."*

It was evident from the Report of the Belfast Health Commission, published in 1908, that very adverse circumstances affected the health of adolescent workers in Belfast, though housing conditions and unhygienic conditions of school-rooms may have been answerable as much as working conditions. Although the infant under five years of age had a better chance of life in Belfast

* Annual Report of Chief Inspector, 1908, pp. 154-5.

than in Manchester, not so the young persons aged fifteen to twenty years; in that age-group the mortality was found to be double that for the same age-group in Manchester.

"It needs," said Miss Martindale, "little power of imagination to realise the pain and wretchedness which must have preceded these deaths, and as the death-rate is a sign of the standard of health, it is not difficult to picture the number of children who are living on, but who are robbed of that health which brings vigour, buoyancy, and light-heartedness. Mrs. Dickie, the Local Government Board Inspector of boarded-out children, who has had many years' experience of work amongst Irish children, has, I think, put her finger on one factor in the cause of the high death-rate when she says of half-timers: 'Commencing as they do just at the time when all their physical powers are needed for the merging of childhood into adolescence, the strain of the long day in the hot, noisy mill or factory leaves them without the reserve of strength necessary to support growth of mind and body.' "*

In a wonderful degree the publication of the reports I received from Miss Martindale on such considerations, and on many details and aspects of the employment of children in Ireland, arrested attention there, and aroused true sympathy for the cause of child protection. Not only were the reports, and her very words, widely quoted in the daily Press, but regularly there were leading articles to drive her points home when the Report of the Chief Inspector of Factories annually appeared. In June, 1909, the General Assembly of the

* Annual Report of Chief Inspector, 1908, p. 154.

Presbyterian Church passed the following resolution:

"That the assembly feeling deeply the obligation for the safeguarding of child-life, especially in manufacturing districts, recommends ministers of this Church to study official documents bearing upon the question of child labour, and to endeavour to arouse public opinion in favour of enforcing the law with a view to the protection both of the children and of the law-abiding employer."

In the counties of Antrim and Down, out of 50,686 persons employed in textile factories at that time, not less than 13,691 were under eighteen years of age, and of these 4,144 were half-timers. Thus the question was not a small one for these districts, having regard to the heavy and debilitating atmosphere of dust or humidity, in which so much of the work was done. Miss Martindale felt that a spinner was right when she said, pointing to a group of half-timers, "Ah! indeed, they are hard enough wrought." It was not surprising that the Belfast half-timer was undersized and delicate. A little girl aged twelve (one of many of the same size) she had weighed in a factory in 1906. Her weight was 58 pounds, instead of the 76 pounds that might have been expected for her age.*

The total number of young lives in factories and workshops under some degree of protection by the Factory Acts in the United Kingdom in the first decade of the twentieth century was approximately 1,099,841 persons under eighteen years of age, and of these 459,698 were under sixteen years of age;

* *Ibid.*, 1906, pp. 230-1.

of the latter, 37,129 were half-timers, the majority, 19,211, being girls. The lowest age-limit of admission had been established and duly observed without difficulty over the greater part of the kingdom, but in Ireland we had many attempts at evasion to contend with—generally from the side of the parents; both Miss Martindale and her successor, Miss Slocock, frequently had to follow up falsified certificates, and prosecution of a father was repeatedly necessary.*

A great deal of valuable work was done in Lancashire and Yorkshire textile districts by Miss Squire and her staff, and by Miss Vines in Scottish textile districts, not only in giving effect to the actual requirements of the law, but in watching over details of employment that seriously strained the young worker, such as bobbin carrying up and down stairs, weft carrying by the tenter in the weaving shed ("the tenter has always a tired look"). Conditions affecting them in Dundee jute, hemp, and flax factories were in many ways quite as bad as conditions in Belfast factories.

It is impossible to give here more than this bare idea of the scope of our activities in the matter of child labour, and I can merely refer to the fresh care that had to be devoted to the question during the pressure of wartime. At that time the eagerness of children to help again led to much illegal employment before the legal age of admission, or to full time when only half time was permissible, to employment in school holidays, and at all kinds of

* See Annual Reports of Chief Inspector, 1911, pp. 156-7; 1912, p. 149; 1913, p. 98.

illegal hours in many miscellaneous industries. Many prosecutions had to be taken in London, Birmingham, and the North of England, and in Scotland. Increasing support was given by magistrates and sheriffs in repressing this evil. In 1917, in one case taken by Miss Vines, where very young girls had been employed for excessive hours, and a defence was set up that the pressure of work had led the management to overlook the youth of the workers, the sheriff severely observed that "no one could be so busy that he could not see a girl of thirteen was not eighteen." In Birmingham, Miss Martindale in the same year prosecuted nineteen firms and five parents for illegal employment of children, and in Coventry she prosecuted a firm for employing a child of ten years in a bakehouse. In an outstanding case in the North-Western Division a fruit preserving company was prosecuted by Miss Tracey for employing little girls of eight to ten years, mostly in the intervals between school, in preparing fruit for bottling, two of them being in poor health and absent from school. There was found to be great and special need during the later years of the War for watchfulness by the Inspectors against serious overloading of young workers or their employment near dangerous machinery.*

We have already seen above that certain religious and charitable institutions first came within the purview of the Factory Acts in 1907 as regards industrial work of their inmates, and the question of their inclusion or exclusion had long been a subject of controversy—in fact, ever since

* Annual Report of Chief Inspector, 1917, p. 16.

the Act of 1895 had partly regulated commercial laundries. It is somewhat surprising, in view of the long discussions and the fear frequently expressed by ordinary laundries of unfair competition from the side of institutional laundries, when one learns that the total number of working inmates of institutions under Section 5 of the Act of 1907 never exceeded round about 9,550, of whom 9,417 were engaged in laundry work for persons outside the institution, 4,068 of these inmates being engaged in laundry work aided by power-driven machinery. In commercial laundries fully regulated by the Act of 1907, the last returns to the Factory Department —published in 1911—showed that 103,635 women and girls were employed, besides 11,466 men and boys, and that 75,774 of the women and girls worked in power-driven or "factory" laundries. When it is further remembered that even the largest institutional laundries are relatively small compared with very many large commercial laundries, it is evident that the question of their competition with these laundries barely arises, and that the administrative question of chief importance in the institutional laundries always has been, What was the form of regulation most likely in the special circumstances to aid in securing the well-being of the inmates? The latter are mostly brought into the institution for charitable aid or reform, or special training or special protection against their own weakness, and generally they lack the self-protecting habits of normal industrial workers. The Factory Acts were in no way devised for controlling, nor competent to regulate, either the domestic

conditions in the lives of these inmates or their training or education. The aim of inclusion under the Factory Act was simply to secure that, when they were actually engaged on industrial work (for purposes outside the institution itself, even if not by ordinary way of trade), they might be assured of conditions of work, health, and safety, not less favourable in their circumstances than those enforceable for a worker employed in a factory or workshop.

It was about the year 1899 that we began, as a branch Inspectorate, to come in touch with certain convent or religious institution industries; first, through the complaints of the ordinary trader that they were in an unfairly favoured position, and, secondly, through the research of Miss Deane and Miss Squire in Ireland, into convent industries really carried on by way of ordinary trade. Here the workers were definitely employed under a contract of employment in lace making, knitting by hand or machine, embroidery, shirt making, laundry work, and weaving of flannel, tweeds, and linen. Some of these were inspected for the first time in 1900 by Miss Squire. She and the instructions she gave under the Act were well received by the Superiors. The successful example and high standard set by the Rev. Mother Superior of Foxford Convent, county Mayo, where a woollen factory with dye works had long been carried on (with profit to the peasants of the district as well as the convent), inclined other convents, attempting to carry on small manufactures, to welcome the visit of a Woman Inspector. These were not places for reformatory or protective

occupation of girls and women—not so-called penitentiaries—but real productive establishments. In no such place previously uninspected did Miss Squire find any objection to her official visits; a hope was, however, expressed that the Inspector might always be a woman; she came to the conclusion that occasional friendly inspections were all that was necessary to secure that the spirit and intentions of the Acts would be complied with. When I had the pleasure of visiting them myself later on, beginning with the interesting Foxford Factory, where the nuns managed the business and supervised the work in the worksheds, I found the same spirit, and in that particular factory an attractive combination of successful management with picturesque charm.

The discussions in Press and Parliament in 1900 and 1901 on the problem of regulating the other type of religious institution workplaces, of a reformatory or charitable character—largely for derelict women and girls—when the Act of 1901 was passing into law, led me to enquire into comparative methods of regulating such places in the chief industrial countries of Europe. My enquiries of the officials of sister Factory Departments in France, Belgium, and Germany led to my receiving warm invitations from the Inspectorates of these countries to visit them and see their method of administration. The invitations were accepted, and this was altogether a happy experience; details may be read in the Annual Reports for 1901 and 1902.*

* Annual Reports of Chief Inspector, 1901, p. 152, and 1902, pp. 147 and 194-205.

It was not only the friendly, helpful reception that was gratifying, it was the discovery that in these countries, and most completely in France and Germany, the general hygienic and safety provisions of their industrial laws applied to the religious, charitable, and reformatory workplaces equally with ordinary industrial establishments, and were enforced by the same administrative methods. In France the Inspector had "not to enquire whether a charitable institution works for gain or the technical instruction of its workers; it sufficed that there is manual labour for the law to apply." Regulation was the more necessary in that there were no less than 1,472 religious or charitable establishments employing 48,432 workers, of whom the majority were under eighteen years of age. The long time, over twenty years, during which regulation of the hygiene and safety of these institutional workplaces, including laundries, had been carried on under the ordinary safeguards of the law, gave me a helpful object lesson in France. Commercial laundries had, moreover, been regulated as other factories and workshops had been, and for the same length of time. Thus I saw in them a higher standard of cleanliness, ventilation, and fencing of dangerous machines than had yet been obtained under our more recent regulation of laundries in England. In Germany, where I was received in the Grand Duchy of Baden as a colleague, and accorded the privilege of attending a staff conference of the Inspectorate, under the late Dr. Wörishoffer, their learned chief, I was interested to find how strict was their protection of young

workers against risks of severe accident or dangerous machinery, and how much less they were employed in factory work than with us.

After this experience followed our regular voluntary inspection for several years of a considerable proportion of charitable and religious institution workshops and factories (chiefly laundries), which had submitted themselves to such inspection at the invitation of the Home Office. In Ireland, where the institutional laundries were larger and more numerous than in England, I made some personal visits in 1905 to representative institutional laundries and other workplaces possessing varied characteristics and aims, and began a study of similar English institutions. A few were found to be entirely willing to receive and act on advice from Inspectors in the carrying out of standards laid down for commercial workplaces as to hours, sanitation, safety; others were willing to comply in part. Objections to compliance were sometimes on the score of expense in providing safeguards to machinery, screens, and ironing stoves and so on; sometimes on the ground that great care in supervision obviated need for other safeguards; sometimes that precise limits in hours or fixed mealtimes, or affixing notices and abstracts of the law interfered with discipline; the last-named, and the possibility of an Inspector speaking to a worker, were the measures of protection for the working inmates that were most frequently opposed. Explanations tended, on the whole, to smooth away obstacles, yet in an undue proportion of the institutions nothing was changed under "volun-

tary" inspection, and in these cases, finally, the only course was to refuse to continue the inspection. Full reports on the results of inspection on such lines, by Miss Deane and Miss Martindale in Ireland, and by Miss Paterson and Miss Tracey and other Inspectors in England and Scotland, appeared in Annual Reports for 1905, 1906, and 1907. Remoteness from ordinary life in the atmosphere of these workplaces, too strong a tendency to place production for profit before thorough training of the workers, and too close a dependence on laundry work alone instead of experimenting with varied occupations—in preparation for life outside the institution—were among the defects most frequently commented on by the Inspectorate. Lack of understanding of elements of personal hygiene for the worker as well as of hygiene of the workplace was widely found, and, even after the law and compulsory inspection applied, striking illustrations of resultant ill-health among the inmates were repeatedly reported. At the same time illustrations of good and understanding care (always found in some places) grew in number and greatly developed in enlightened ideas as time went on. Some of the extraordinary risks found in certain places—*e.g.*, an unfenced power wringer fed by a feeble-minded girl; an uncovered hydro with friction cones and driving belt totally uncovered fed by a girl of sixteen with long, loose hair; newcomers set to feed an unguarded calender, for the greater part apparently without accident—tended to suggest that leisurely methods and care in supervision did to some extent lessen risks. In an orphanage

laundry with an uncleanly wash-house and very long hours of work, little girls were found with sore eyes, and some cases were also seen among inmates who were domestic workers. The Sister said they had had a great many cases lately, and that it seemed "almost as if the children infected each other"!* Poor feeding of inmates often came to the knowledge of the Inspectors through uninvited communications from the managers or Sisters, and records of accounts in printed reports of the institutions showed a very low average expenditure per head on this item—*e.g.*, 2s. 10d. per inmate weekly in one Scottish institution—many inmates being young, undeveloped girls, and here the hours were 8 a.m. to 7 p.m., with one and a half hours' intervals for meals; in another the report stated that the average cost of dieting superintendents and inmates was 3s. 11d. per week, and average cost of clothing inmates £1 10s. per year. After application of the Act of 1907 to these institutional workplaces we occasionally learned of serious outbreaks of ill-health among working inmates, and invariably we called in the services of the local medical officer of health, or the certifying surgeon, or both—improvements following. In one case escape of sewer gas into the house; in another defective management of working conditions, with dreary routine and absence of play or outdoor exercise for growing girls; in yet another pressure for output, with long hours of work, was found to be the immediate cause of cases of illness occurring. In very many institutions, however, the inmates are

* Annual Report of Chief Inspector, 1905, p. 258.

of poor constitution to begin with, and not equal to standard industrial hours until after some care for the building up of their health. At first we had many places to inspect where inmates were more or less feeble-minded, but gradually these have passed under care of the Board of Control for the Mentally Deficient.

In 1907 the last of the "voluntary" inspections were specially welcomed by managers, who increasingly applied for advice and information. In 1908 compulsory inspection was generally cordially welcomed and Inspectors were often pressed to return. Conferences on aims and method of conducting the institutions increased among associations of managers. Educational and character-forming occupations were in a few places added to laundry work or substituted for it, and attempts were here and there made to try and suit the special needs of individuals. For example, a woman who made nothing of laundry work or needlework took whole-heartedly to the printing of programmes and notices. One began to see hope of the passing of the listless, lifeless condition of many inmate workers, and of the coming of something of the vital, "alive," and frequently graceful movements of the "factory girl." It is not impossible even with laundry work as the chief occupation of the institutional workers to find happy activity among them—when the Sister Superior or manageress is sufficiently young in spirit to develop "hobbies" in recreation, and to encourage in the girls a sense of responsibility. I know of one institution where the Sister Superior aims at self-government in the best spirit of a "public

school." And here, when charming baskets made by the laundry girls were brought out for my inspection, they asked eagerly that I might also "see Sister's work." Still, it must not be supposed that there was not very much to be done to secure compliance with the letter and spirit of the Act of 1907 during the seven years following its coming into force.

Although desire of exceptional treatment in the matter of hours declined, still, on the whole, the total extent of hours spent at work is more nearly drawn out to the full permissible limits than is recently customary in commercial workplaces. Safety of the machinery and sanitation of the workplace were gradually secured, but it was a slow and tedious process to develop any enlightenment as to the value of shortened spells and hours. In a few cases there was obstinate resistance to instructions in the requirements of the Act, and reform was not secured until the Home Office had exercised the power of withdrawing all privileges allowed under the Act. The last reported case of that kind was one in 1914. Yet "in the great majority of homes under Section 5 of 1907 there continues to be faithful observance of the law."* The War brought reverberations into these workplaces as well as into all others. New ideas were aroused among managers by the varied experiments in special workrooms for unemployed women, during the first few months of the War, under Queen Mary's Fund.† The great general demand for women's

* Annual Report of Chief Inspector, 1913, p. 94.
† *Ibid.*, 1914, pp. 46-7.

and girls' labour altered the whole position for any of them willing to retrieve themselves by service to the nation, and it was interesting to learn that the numbers in the Homes markedly declined. After the War, girl inmates began to show their new powers of initiative by writing to the Senior Lady Inspector, thus showing the value of abstracts and notices with names and addresses affixed in the workplace.

In one such place a complaint was seriously justified by the investigation that followed. Long hours of work for very young girls, total absence of outdoor games, with poor dietary, had resulted in much sickness. I visited the head of the Sisterhood, of which this institution was a branch work, with the Senior Lady Inspector, and we found her open to the reception of new ideas. A change in management followed, with happy results. We received, some months later, direct from the girls and their new Sister Superior, a hearty and welcome invitation to attend their annual festivity.

CHAPTER VI

THE LIFE OF THE INSPECTOR AND ITS INFLUENCE ON LEGISLATION; EXPERIENCES IN COURTS

"I doubt very much whether the office of Factory Inspector is one suitable for women. . . . It is seldom necessary to put a single question to a female. . . . Possibly some details, here and there, might be superintended by a female Inspector, but looking at what is required at the hands of an Inspector, I fail to see advantages likely to arise from her ministrations in a factory . . . so opposite to the sphere of her good work in the hospital, the school, or the home."—*Chief Inspector of Factories*, October 31, 1879.*

"The men's and women's sides of the Inspectorate . . . will be amalgamated into a single organisation. Women Inspectors will be regarded as eligible for all posts. While the complete fusion, which is the ultimate aim, can only be brought about gradually, the main principles will be put into effect from the commencement."—*Chief Inspector of Factories*, June 8, 1921.†

WHILE we await the development of the later of these two extremes in official views on the possibilities of employment of Women Factory Inspectors, there is ample material in the intervening Annual Reports of the Chief Inspector, and in comments and conclusions in Parliamentary Debates upon them, for grasping the realities in the life and activity of the Inspectors.

* Annual Reports of Chief Inspector, 1879, p. 98.

† *Ibid.*, 1921, pp. 9 and 10.

In the reports it is clear that they were engaged all the time on work that really mattered in its immediate effect on the life and conditions of women as workers in the factory and workshop, as outworkers, as mothers, and as industrial inmates of charitable institutions; and that the Inspectors brought new light, health, and safety into working conditions for adolescent girls and children. Their work was not formal, nor simply a question of detail, but constructive for the nation in the things that most needed new thought and perception. The fact that they never instructed occupiers of factories about "fencing" of dangerous machinery* that was operated solely by men did not lighten their work. It simply set them free to concentrate on immense human problems needing their special attention. Women workers had also to be drawn to confide in the Inspectorate, and to co-operate intelligently in transforming factory conditions from within. Growth of the spirit of self-help in the women was noticeable in details of Annual Reports from 1896. I was able expressly to point to its growth in 1901 and onwards.

As regards "a great many provisions" in the Factory Act of 1895, Mr. Asquith, speaking in the House of Commons on July 31, 1896, said he was "quite satisfied from recent experience, that these provisions could not be satisfactorily enforced except by female inspection." And Sir Matthew White Ridley, then Home Secretary in succession to Mr. Asquith, replied that "much good had been done in the interest of female workers of the

* See footnote, Introduction, p. 12.

country by the appointment of these Lady Inspectors."

In 1904 Mr. Asquith, in pressing on another Home Secretary, Mr. Akers-Douglas, the need of really sufficient additions to the number of Women Inspectors (then numbering twelve), did so for the reason " that the girls and women of the country might be more efficiently protected." This had followed many annually repeated pleas in the House by various members, foremost Sir Charles Dilke and Mr. H. J. Tennant, for more liberal development of the work of the Women Inspectorate, and suggestions were made for placing them in district charge in centres of many women's industries—*e.g.*, in potteries, in Ireland—and commendation was expressed of an experiment of this kind in the West London Special District.

Mr. Theodore Taylor, speaking as a factory owner in the debate on Home Office Estimates on August 4, 1904, desired " to acknowledge the very great debt of gratitude which employers generally were under to the Women Inspectors. There were very many abuses which employers were not aware of until they were brought to light by the Women Inspectors . . . he joined in the strong request that the number should be largely increased . . . the adoption of this course would tend to the efficiency of factory labour." Mr. John Burns held that " their work had to do with matters which no average man could understand," echoing a point made in earlier debates by Mr. Asquith, that the Women Inspectors could " bring themselves into close contact with the workers and obtain from

them with greater spontaneity actual facts of the real duties of their lives and work," and that this freedom of communication resulted in much better administration of the law.* Mr. Akers-Douglas, replying in 1904 to the demand for increase in the Women's Branch of the Inspectorate, "had been very much struck by the unanimous opinion expressed that day," as he had been also, he said, by "reading the very valuable report" of that year on the work of the Women Inspectors.

Members of Parliament, indeed, showed throughout that they were entirely convinced that efficiency and economy followed on the spontaneous character of the work of the Women Inspectors' Branch, and that the confidence reposed in them by the workers, for whose aid they were appointed, was appreciated. As Mr. McKenna said on March 8, 1898: "We know the very high favour with which they are looked upon by the working classes." The only definite exception that I can find to this general commendation is in a complaint by Mr. Jesse Collings on June 29, 1903, that they went beyond their province of seeing that the laws were obeyed by doing "missionary work." This complaint seems to refer to their steady endeavours to encourage employers to go beyond the law in promotion of welfare conditions—an aim which came into wider public consideration during the Great War.

There are many passages in the Debates to show that it was not only the direct work of applying the Acts and Orders, but even more the faculty of

* Debates on Home Office Estimates, August 5, 1901, and June 29, 1903.

acting both as an intelligence branch and as a missionary arm of the Department that was valued by the country in the work of the Women Inspectorate. Not only was the extension of localised administration, by women for women, in great centres of women's industry urged over and over again from 1899 onwards; Sir Charles Dilke also led many members, particularly in 1906, in emphasising the value of their special enquiries and reports on such questions as employment of women after childbirth; the need of after-care of young persons rejected for physical unfitness in the factory and thereupon employed in less regulated occupations and workshops; industrial disease and poisoning among women and girls; observance of special regulations peculiarly affecting women and girls; fines and deductions from wages; sanitary arrangements; and other matters in which the needs of women workers necessarily vary from those of men. "The great organised trades," he said, "are to some extent able to protect themselves, but women workers depend," to a great extent, on legislation and enforcement of the law, and "on the Women Inspectors especially falls the duty of enforcing the law," "where the inspection is most necessary."

In July, 1908, Mr. Herbert Gladstone, speaking as Home Secretary, and alluding to a 40 per cent. increase in numbers of the Women's Branch (which brought them to eighteen), said: "The time has come when the demands of the country for more Lady Inspectors cannot be resisted," and he declared that the "increase would be gradual in the future," and that there would be "no change in the character

of the excellent work" done by them. At this figure, eighteen. the numbers remained for several years. Then in 1911 we find Lord Henry Cavendish Bentinck asking for more, and expressing disappointment in finding that the numbers "remain the same"; in 1912 he and Mr. Alfred Lyttelton referred again to the subject, and the former pointed to the valuable concentrated "experiment in the way of fencing machinery" that was going on in laundries in the special West London district, under a Woman Inspector, with resultant decline in number of accidents. He referred also appreciatively to their work throughout the country under the Truck Act.

The lively interest that members took in reading the published reports of the Women's Branch, with their "vivid and humane representation of the facts of our factory system," was emphasised by Mr. Morrell and Mr. Ramsay Macdonald in July, 1913, and Mr. Hills and Lord Henry Cavendish Bentinck returned to the old charge, that, for the sides of the work affecting women and young workers, efficient administration could be secured only by setting the Women Inspectorate to do it. "It is quite true that it is the duty of the male Inspectors as well as of the female Inspectors to look after those women and children," but for these Mr. Morrell urged "the work cannot be effectively done except by women."

This, then, was the Parliamentary mirror of the toils and adventures of the Women Inspectorate. There is, however, a word to be said on an aspect that appears to be neglected. Undoubtedly it was helpful to the Women Inspectors on the one side

to know, during so many years of difficult and heavy work, that Parliament grasped the extent of their task and the nature of the work that they were reaching out to achieve in response to the appeal made to them by the industrial womanhood of the nation. Yet, on another larger side, there was much pain also in the feeling that this repeated emphasis tended to obscure any general perception of the highly urgent need that required strong support, for Men Inspectors in dealing with preventable accident and injury, and far too rough and unhygienic conditions for the manhood of industry, in places where women were little employed or not employed at all.

As far back as 1898 my own belief was that effective reorganisation of staff involved not only concentration of experienced Women Inspectors on the main conditions affecting women workers, but, even more, a lightening of the cares of Men Inspectors on this side to allow of their greater concentration on prevention of accidents and on very dangerous trades where women may not enter as workers. In 1920 accidents affecting male workers numbered 124,580, of which 1,363 were fatal, as compared with 14,122 affecting female workers, of which 41 were fatal.* Examples of the great accident producing industries are extraction and conversion of metals, shipbuilding, docks, construction of buildings, foundries, locomotive, and other large engineering works. In Parliament

* In 1910 the figures were: Males, 118,822 (fatal 1,049); females 10,728 (fatal 31). The rates of the two do not vary widely.

the conclusion has invariably been reached that, in health and safety problems for women and girl workers, Women Inspectors are primâ faciê the more competent. Is it not in the great safety problems for men and boys that a field of specialisation lies for Men Inspectors of a nature as absorbing as that which enthralled the Women Inspectorate during the last twenty-five years ? The fusion of the men's and women's sides of the Inspectorate, while avoiding some old problems of administration, raises up new ones, not less large. A solution appears clearly within reach, but discussion of it is outside the scope of this survey.

On neither side—men's safety problems nor women's health problems—is skilled enquiry by the Inspectorate or experimental development of regulation finished. The difference of potential or actual maternity alone (without consideration of claims on girls and women as the home-makers of the nation), according to Dr. Janet Campbell in her memorandum to the War Cabinet Committee on Women in Industry,* absolutely prevents equal competition of women with men in industry. She lays stress on the need of further investigation into the physical effects of employment in industry upon adolescent girls as well as adult women, and this view supports the considerable enquiry made in the past by Women Inspectors into heavy work done by girls. The persistent call of Women Inspectors during many years for welfare conditions saw both its justification and its fruit in the industrial war-

* Report published 1919, Cmd. 135. See especially pp. 170 and 253.

work of women. The extensive employment by the Ministry of Munitions of Women Dilution Officers, to strengthen and promote employment of women dilutees in engineering trades, ran also in harmony with the idea of specialisation rather than fusion of function. Dr. Josefa Joteyko, in her "Science of Labour,"* deals with experiments she had made showing the differing modes of expenditure of energy in industry by man and woman. She says: "Each represents a distinct function," although each form of energy is equally necessary to industry for its own purposes. While her experiments established endurance as a characteristic in the feminine sex requiring a slow and gradual expenditure of energy to avoid fatigue, muscular force or strength with a power to act instantaneously under a stimulating impulse are shown to be characteristic of the masculine sex, and to be accompanied by ability to recover rapidly from fatigue. "Most careful selection of working women with regard to their muscular powers," she considers, is necessary for successful industrial labour.

Whatever the issue of these various considerations, Parliamentary and medical, on women's work, it is well for the general community to understand the ways in which the Women Factory Inspectors actually worked during the past quarter of a century. During this period, says a writer in the *Women's Industrial News* of January, 1915, the "direct influence" of Women Inspectors on "enact-

* "Science of Labour," by Dr. Josefa Joteyko. George Routledge and Sons, Ltd., 1919.

ments affecting women and young people is very great, and they also helped to raise the standard of legal regulation in the British Isles by study of foreign industrial legislation."* She traced out the questions in which their work had affected development of the Acts and Orders from 1895 to 1907, and mentioned among others the following: overcrowding, insufficient or unsuitable means of heating workrooms, defective and unsuitable sanitary accommodation for women, dangers from locked doors in fire or panic, excessive overtime, need of power to qualify certificates of fitness for young workers by specification of the class of work to be done, insufficient general ventilation, need

* This assertion appears to be supported by the summaries I made for the Annual Reports for 1894, pp. 33-4, on French laws and orders, and for 1895, pp. 136-219, on German and Austrian industrial codes, and in various other places, before public interest in comparative labour legislation had been awakened.

References by Women Inspectors, and particularly by Miss Squire to law and administration in other industrial countries, appear in my Annual Reports over and over again, generally where our laws were inadequate to remedy complaints. For instance, complaints on defective light in the factory, lack of washing conveniences, on heavy weight carrying and dangerous processes (see Annual Reports of Chief Inspector for 1897, pp. 103-5; 1898, p. 169; 1899, p. 239; 1904, p. 243).

I also visited continental countries to inspect factories with the Inspectors of the country, and to study their office methods (see Annual Reports, 1899, 1901, and 1902), and to take part in Congresses and International Exhibitions (see Annual Reports, 1903, 1911, and 1920).

I began to study fatigue prevention after conferring with Dr. Josefa Joteyko in Brussels in 1903.

of inspection of institutional laundries, regulation of fines and deductions, etc. "The social progress of recent years," she said, "has been the result of an unprecedented attention to matters of detail. Investigation and administration have begun to go hand in hand, and the scientific spirit which has been so long in coming to its own in matters social may now be said to have arrived . . . the great advance which the Women Inspectors have been able to bring about in factory legislation has been largely due to the sympathetic insight which has made them virtually representative of the people."*

During the whole period 1893-1921 these Inspectors were, by official instructions, directed especially to enquire, report, and take action in behalf of women and girls; a task to which they addressed themselves with hearty loyalty and intense interest.† They had Inspectors' full powers of action, and worked under their own women officers from 1896 to 1921. It was from 1902 onwards that they directly instructed occupiers on fencing and prevention of accidents in the clothing and laundry industries, of which they had made special study. Earlier in the same year full authority was entrusted to me, as head of the branch, for the sanctioning of their prosecutions, a power hitherto exercised subject to approval by the Chief

* *Women's Industrial News*, January, 1915; article by Dorothy Haynes, p. 313.

† In a few instances, where men and boys were jointly concerned with women in contraventions—*e.g.*, in Truck cases, fencing of machinery in laundries, or illegal employment of children—a Woman Inspector would take proceedings for both.

Inspector. Except for slight variations in the early stages, co-ordination of their special work with the general work of the male District Inspectors followed a steadfast prescribed course from 1898 to 1921.

The very boundaries set to the work of the women officers led, as things were, to what may be called their "higher education" in the nature of the representative and judicial administration of their country. The thorough general knowledge they acquired, all over the British Isles, of conditions in every productive or manufacturing industry employing women and girls, sprang also from their concentration as a branch on this aspect of industrial employment. They made close acquaintance with local as well as central methods of administration by daily dealings with health and education authorities and their officers, as well as with magistrates, sheriffs, and their clerks. They had to act for themselves—most fortunately, for "power to do comes of doing"—in courts of summary jurisdiction, learning procedure and something of the "law of evidence" as they went along, and gaining an understanding of the details and principles of the Truck Acts and Factory Acts, that could only be acquired by personally testing them in the courts.

Probably in nothing did we owe so much to the first tentative efforts of Miss May Abraham and Miss Mary Paterson as in their adventurous readiness from the outset to try their powers in police and sheriff court proceedings. I may confess that my own first feelings were chiefly of consternation on learning that I had, a few weeks after entering

the Department, personally to prosecute an occupier for illegal employment of girls—never having previously entered a police court. I suggested to the District Inspector that he might conduct the first one, just " to show how it was done," but fortunately and wisely he declined. It was not very long before I found a new interest in methods of administration, through my discovery of a clause in the Factory Act under which I might ask the magistrates to " make an order in addition to imposing a penalty on an occupier for failure to keep his factory in conformity with the Act "*—the magistrates actually complying with the request, on condition that the terms of the order were drawn up by the local medical officer of health and myself. This discovery was indeed crowned when, in a great mill employing about a thousand workers, it resulted in the closing of ancient and insanitary conveniences pouring effluvia into heated spinning rooms, to the erection of passable temporary sanitary conveniences, and, finally, to completed construction of a modernised water-carriage system of conveniences.

It was not only in courts of summary jurisdiction that our education was carried on. Between 1894 and 1916 we had sixteen appeals on points of law to the High Courts of England, Scotland, and Ireland issuing from cases taken by Women Inspectors in the Courts of first instance. Through these we learned something about interpretation and the bearing of " decided cases," as well as the thoroughness with which trained lawyers prepared

* Factory Act, 1878, sect. 81; later Factory Act, 1901, sect. 135 (2).

a case; we also came in contact with legal advisers, law officers, Queen's and King's Counsel, Treasury solicitors, Procurators Fiscal, Sessional Crown solicitors, and so forth. Appeals to Quarter Sessions on matters of fact occasionally gave us further enlightenment, and, after a while, subpœnas served on Inspectors to give evidence in civil claims of workers against their employers opened up for us new chapters in the law of the land.

Without warning an Inspector would find herself when in a police court arguing her case not merely with an experienced solicitor acting for the defendant, but sometimes with a well known Q.C. (or K.C.). Our armour on such occasions was a thorough acquaintance with the facts and circumstances, and with the scope of the Acts which we were trying to enforce. Much of the professional point of view and technique had rapidly to be caught up not only on these occasions, but also during the hazards of passing cases over to the Treasury, or to the Sessional Crown solicitor in preparation for an appeal. The range of subjects that we sent up was sufficient to introduce us to not a little of the lighter and more humorous sides of legal proceedings, as well as to the tedium of delays. In our record year for participation in appeals on points of law—the year 1901, when Miss Squire was concerned in three appeals and Miss Deane in one—there was some entertainment in spite of more serious elements. Three of these appeals seem to deserve rescue from oblivion for other than purely legal reasons. In *Deane* v. *Hulbert Beach* we learned that the section (of which

we had hoped much in the way of remedy for workrooms either cruelly cold or stuffy because unprovided with any proper heating apparatus), providing that "adequate measures shall be taken for securing and maintaining a reasonable temperature in each room in which any person is employed," secured nothing whatever but a reasonable altitude of mercury in the thermometer, however improper the "measures." In this instance these measures were described in the Court of Appeal by counsel as "stuffing the room with a number of women, heating with gas jets, stuffing up chimneys, and so on." He argued, first, that the "legislature must have meant that it shall be reasonable having regard to the object in view—namely, the health of the person employed," but when asked by one of the Judges, "When you say 'it,' what do you mean by 'it'?" his reply was, "The warmth or temperature." A moment or two later he admitted, "It is a slip in the Act," and the Judge replied, "They ought to have used the word 'ventilation'—adequate ventilation." On which counsel remarked, "Yes, that is the short point. It has been brought up with a view to amending the Act this session."* In *Fullers, Ltd.* v. *Squire* there was an appeal by a defendant employer against a conviction and penalty for employing young women through the night, on Saturday afternoons, and on Sundays in packing and decorating wicker hampers and ornamental boxes, and filling them with bonbons and sweetmeats in fancy

* From shorthand notes of the case quoted in Annual Report of the Chief Inspector for 1901, pp. 278-9.

patterns, tying up with bows of ribbon and the like. The argument for appeal was, substantially, that the work was incidental to sale, not production, and that the place was a shop, not a workshop. No legal argument was verbally attempted by counsel for the respondent (the same counsel as in the previous case), but sample boxes, as packed and decorated with bright ribbon bows by the young women, were shown to the Judges and made a fine splash of colour in court. The appeal was dismissed, the Judges declining to interfere with the discretion of the magistrate in deciding the individual case on the facts before him. In *Squire* v. *Bayer & Co.* there was, from an Inspectors' point of view, more tragedy than entertainment in the decision, but the whole case is a very good measure of the distance that has been travelled in our industrial and social standards since the year 1901. A case had been brought before the magistrates in order to test the legality, under the Truck Act, of a rule posted up in the defendant's factory, that "all workers shall observe good order and decorum while in the factory, and shall not do anything which may interfere with the proper and orderly conduct of the business thereof, or of any department thereof . . . a fine of 6d. (or less at the discretion of the manager) shall be paid by each worker who shall be guilty of any infringement of this rule." Under this rule numerous fines had been imposed upon young girls for speaking, laughing, sneezing, etc., and they could not know beforehand what "acts or omissions" on their part would render them liable. The intention of the Act had apparently

been to secure such knowledge to the workers before they were liable to a fine. The Inspector selected for her test case two girls who, among others, had been fined for amusing themselves in the dinner-hour by singing and dancing to a small harp in the workroom where they were allowed to remain, no mealroom being provided on the premises. The High Court held that the case was not free from difficulty, but that they could not say that the justices had come to a wrong conclusion in finding that the fines were imposed under a lawful contract. "It would be going too far to say that the language prescribing a fine for breach of good order and decorum is necessarily too general." The appeal was dismissed. In these later days, since the War, the girls would not only have a legal claim to take home their minimum wage clear of all deductions, but employers very often think it natural and proper to provide a mess-room, and sometimes even a recreation room and a piano; dancing in the dinner-hour is occasionally not only encouraged, but teaching also given at the employer's expense.

In the year 1900 a case was decided in the High Court (*Tracey* v. *Pretty*) which brought us an experience extending over nearly two years, that can have fallen to but few, if any, other litigants. It arose in our endeavour to test the powers of the Factory Department to act in default of a sanitary authority for securing conformity to some standard of sufficiency and suitability in the provision of sanitary conveniences. The case had been heard three times, first by two Judges who differed, then

by three Judges, one being the Lord Chief Justice, Lord Russell of Killowen, who reserved judgment, but died before giving the decision. It was heard for the third time by his successor, Lord Alverstone, and the decision defined for the first time what was meant by the "proceedings" open in England and Wales (outside London) to an Inspector whose duty it was to act in default of the local authority. The Inspector assumed all the powers of the authority, acting on the advice of their surveyor, and could serve a notice under the Public Health Acts on the occupier of the factory, the magistrate having no authority or duty except to enquire whether the notice was properly served and, if so, to convict. Appeal on the reasonableness of the notice could be made to Quarter Sessions.*

In 1901, our interest having been thoroughly aroused as to the possibility of increasing capacity for the legal side of the work and of improving methods in conducting prosecutions, an invitation was given by the Women Inspectors, through Mrs. H. J. Tennant, to Mr. R. B. Haldane, K.C., M.P., since Lord Haldane, to address us on the "Conduct of Cases under the Factory Acts." To this he made a generous response, and both Men and Women Inspectors had the great advantage of listening to a distinguished advocate on the subject, at a gathering at Mrs. Tennant's house on April 18, 1901. Starting from the standpoint, familiar to a Factory Inspector, that the Crown does not fight a case unless it believes itself in the right, nor until satisfied of

* See Annual Report of the Chief Inspector for 1900, pp. 360 and 363.

the truth of the matter in question, he gave new meaning to some of our experience in preparing and prosecuting a case, and need of readiness to meet unforeseen contingencies; he also gave us new points for handling evidence and witnesses. We were cheered by the stress he laid on "the assurance, which is a very real one, that every case you lose brings with it fresh experience, perhaps more than the case you gain," and that it is "only continual practice and dogged perseverance that makes people grow in this as in other respects." This same assurance was given me personally by my own early experience, but yet more by watching the growth in power, in this field, of colleagues working under my direction. Of one of them I had the gratification of once reading the opinion of a lawyer well qualified to judge, who was in court at the time she was conducting a difficult Truck case, that it "could not have been better done." Sometimes words of praise for prosecuting Inspectors would appear in a local paper. A single instance may suffice; in 1905, when a presiding magistrate was reported to have said of two Women Inspectors, concerned in a lively case of obstruction (of the Inspector) and illegal employment (of women) before him, that "His Majesty was to be congratulated on the possession of two Inspectors who did their duty so conscientiously and well." The one, he said, had "very ably and properly conducted her own case"; the other (who had pursued retreating workers in the factory down a trap-door into a dark cellar) "seemed to have behaved with great pluck and activity."

On this side of their work, in patience, resourcefulness, and persistence, and in the high percentage of success in results, the record does appear somewhat remarkable. Taking only the years from 1898 to 1914, the Women Inspectors brought 4,962 cases into court against 1,974 occupiers, and secured convictions in 4,715 cases. And the average penalty imposed by magistrates rose, on the whole. The years of greatest activity in the courts were between 1901 and 1911. Though many interesting cases came in earlier and in later years, the tendency increased, after 1911, to place more reliance on conference with or persuasion of occupiers. The nature of infringements of the law has largely appeared in preceding chapters, and the proportion of cases was (as in complaints): first, illegal employment; secondly, defects in sanitation and infraction of health regulations; thirdly, irregularity in payment of wages.

It seems very natural that a high proportion of our younger Women Inspectors have been impelled to read for the Bar in 1920-21 so soon as such a step was open to them. Long after some of them have been called to and are successfully practising at the Bar, it may touch them to read of early experiences of Women Factory Inspectors during the arduous battles they fought on behalf of many extremely poor and hard-driven women workers. The life they led can only be given by fragments.

Here is a little extract from a diary, the flotsam of time:

"*Midnight* . . . *December* 31 . . . we are at L——, cold, miserable. Came here to see . . . Sessional Crown Solicitor about case to be stated *re* order of D—— magistrates in the case of X——.

"*January* 1.—We listened to the clock striking the new year while making copies of draft-stated case which we had drawn up ourselves and which . . . Sessional Crown Solicitor had approved (we are very proud of this draft). At 8.30 a.m. we started in a wagonette with two horses, one of which had no shoe, with snow on the ground. . . . Arrived D—— 6.30 p.m., found Sessional Crown Solicitor and two resident magistrates, had long conference, read them our stated case, which they adopted *in toto*.

"*January* 2.—Conference all day long and attendance in court, when J. P. signed stated case with exception of . . . Sat up till 2 a.m. copying stated case ready for service next day. Atmosphere very damp, also cold. . . . Slept under nine thicknesses of blankets and two counterpanes.

"*January* 3.—All day trying to get stated case signed by outstanding magistrate, who flatly refused, saying, 'I know X—— was in the wrong, but it's making too much of it to take the case to Dublin.'

"*January* 4.—At 4 a.m. we started for our fifteen-mile drive to nearest railway-station, bright starlight, lovely sunrise, nearly choked with clothing and hot bottles, and sat nursing our best hats on our knees."

For "peripatetic" Inspectors the difficulty was a real one; the fitting in of visits of special enquiry, general routine visits of inspection, visits on extremely varied kinds of complaints, with the successful prosecution of prolonged legal activities in widely scattered places. Yet I know of no case where action failed through omission by an Inspector

to serve a notice or complete any legal formality or be at the necessary spot at the prescribed time. There was a flame burning within that seemed to consume obstacles by the way, and rendered innocuous even very adverse climatic and other conditions. Long cross-country drives in Ireland (undertaken at times simply to carry out a formal act) would sometimes last all day in an open car in pouring rain, or a day in a tiny, stuffy police court might have to be preceded by a drive beginning before daylight on a stormy winter morning to fetch intimidated witnesses for the case. In Lancashire a start might have to be made at 4.30 a.m. from a hotel (with the aid of knocking-up by the night porter), to reach a distant country mill, unobserved, by a new route, in order to detect time-cribbing before 6 a.m. Tussles with manageresses to obtain the luxury of clean sheets on the hotel beds, and struggles to secure amendments in conditions of uncleanliness (about which "Lord X—— Y——, here last week, had not complained"), were much more against the grain. Yet all seemed small in comparison with such conclusions as that of the *X—— Sentinel* that the Lady Factory Inspector had "emerged triumphant" from her case; that the "Truck Act has a living force for the protection of a worker as far away as Altnagapple"; and that "the publicity given to these prosecutions is likely to have a beneficial effect throughout the county." Or, again, the comments of the *Daily C——* on the prosecution of a firm employing a number of young girls in processes scheduled as "dangerous" was enlivening. A certain town

which was "famous for its magistrates in Shakespeare's time yesterday let off notable offenders lightly. For employing four young girls without the certificate of the doctor which the law requires a fine of 10s. in each case was enforced—this being positively the first offence of the sort; and for an incredibly mean breach of the Truck Act, by means of which a girl had her wages stopped for two whole years to pay her father's rent, the firm had to pay three guineas. Grinding the faces of the poor is cheap down in ——, and but for the Woman Inspector who found out what was going on it would cost nothing at all."

Consolation sometimes came swiftly to the Inspector on a refusal of magistrates to convict in a closely contested case for, for instance, heavy deductions from the girls' small wages, or for waste in production. In such a case, the firm, before leaving court, offered to meet the Inspector's views by lowering the scale of deductions for the future to figures that, if yielded at an earlier stage, would have obviated the need for prosecution. Publicity in such things was ever our most potent helper. Something of the "setting" of this case, in the court, may be brought up from the past by means of a stray leaf of a letter, come back to me from the colleague to whom I wrote it in 1899:

"The firm had arranged quite a dramatic scene for us—no less than three barristers, with wigs and all. Mr. Y——, Q.C., defended, with the help of his friend, Mr. S——, and another friend of theirs who came in from the Assize Court to enjoy himself. All the four partners were there, and their solicitor. It would take too long to tell

the whole story now, but . . . it was worth while fighting, and we were in court until 3 p.m. I had breakfasted at 6.30 a.m. in London, so you will believe that I was glad when lunch-time came. The stipendiary and the magistrate's clerk listened with the greatest interest to Miss Squire's clear exposition . . . but, alas ! our witnesses were not nearly good enough. One of them was like wax in the hands of Mr. Y——, who, as one of the sergeants of the court confided to me, 'was not one of your bullying sort, but quite gentlemanly.' The stipendiary could not make up his mind, however, and is going to think it over and give his decision on Tuesday."

His decision then was to dismiss the case on the evidence before him, but not as a precedent to govern other cases. The deductions had been so large, in relation to the wages of the girls, that they could only be levied by small weekly instalments, extending over months.*

Two Inspectors in the same year had an almost incredible series of experiences in Donegal (details of which can be seen in the Blue books) when trying to limit very long hours of employment of women in "kippering" processes on an island, and to secure payment in coin for outworkers on the mainland engaged in knitting. A study of legal procedure was involved that proved enlightening to the Inspectors, while one of them most deeply engaged in the latter of these cases lived for the most part practically under police protection. She was "much cheered by the sympathy and gratitude of the peasants," on whose behalf she doggedly

* Annual Report of Chief Inspector, 1899, p. 249.

prosecuted the case against local agents giving out the work. In the "kippering" case there were two hearings. At the first, there was equal division of the magistrates, ending in its being "dismissed without prejudice." At the second, there were five magistrates, and the case was dismissed by a majority of three on the ground of exemption of the processes from the Act. The hearing was largely "occupied by the elaborate speech of the solicitor for the defence. . . . The climax of his oration was reached when he appealed to the magistrates not to allow" the Inspector "to hie herself back to the Home Office bedecked with the plumes of victory." The case which was stated for appeal "never reached a hearing, owing to a failure to observe a legal requirement" on the part of the legal agent, to whom it was entrusted when it passed out of the hands of the Inspectors.*

It would require a separate book of some size to tell of many more of our memorable experiences in the courts, and of the wonderful, varied play of human circumstances and character there. It may be, as one of the Women Inspectors once observed to me, the most difficult thing in the world to tell—or to secure the telling of—"the truth, the whole truth, and nothing but the truth." Yet the first business in a Court of Justice, however summary, is to secure the presentation or unfolding of truth, and truth being always near the mainspring of life, this is perhaps the reason why so much entertainment, interest, and strange attractiveness is to be

* See Annual Report of the Chief Inspector for 1899, p. 247.

found there. Possibly we had far too many cases in which the size of penalty for serious contraventions seemed not at all deterrent. And yet all the time a process was going on—of which we saw glimpses now and again—in the recognition by employers of the thing that really mattered, their moral, as distinct from their legal, responsibility in matters affecting health and well-being of the workers in the factories and workshops. And memory lingers on a case in which deterrent penalties were obtained in circumstances where every interest of the locality appeared to be against an impartial hearing:

"The employment of the women from 8.30 a.m. of one day until 5 a.m. on the next was on a mourning order for the magistrate's clerk. The magistrate, before whom the informations were brought, at first refused to sign them, and only did so on the recommendation of the magistrate's clerk. The active partner in the business is a magistrate. The Mayor (in the chair) is the other workshop employer, who was cautioned for illegal employment of a child. At the hearing of the case a strong opinion was expressed by some of the Bench that the offence was merely technical, and that the Factory Acts were hardly intended to apply to such country towns. Under these circumstances . . . all concerned are to be congratulated . . . on the fact that sufficient penalties were imposed to mark the offence as more than merely technical."*

In this chapter I have, so far, mainly considered the side of the Inspectors' work that followed from the need of enforcing observance of the standards in the Acts, a need which was greatest in the earlier

* Annual Report of Chief Inspector, 1901, p. 161.

years. Routine daily inspection of factories and workshops at all times took a large place and increasingly so, until it was far the largest part of the life of the Woman Inspector. It was, of course, vital that she should visit as many as possible of the tens of thousands of places where female workers were employed, to give both employers and workers all that can be given and that they desired from such routine inspection. It has already been seen how new light was thrown on many questions of health, safety, and welfare, how fresh attention was aroused to the importance of many sections in the various Acts, and how the Women Inspectors, by special concentration of attention on these in the workplace, amassed fresh material for advance in legislation and administration. In an ordinary year, let us take 1913, they would effectively inspect between 6,000 and 7,000 factories, between 3,000 and 4,000 workshops, visit many outworkers, factory workers at their homes, besides hospitals, local authorities, and the courts. They would investigate many reported cases of industrial poisoning, between 600 and 700 accidents to women and girls in laundries and wearing apparel industries. Contravention notices to occupiers would number 9,000 or more; prosecutions in 1913 numbered 373 against 142 occupiers. It is evident that the direct action of the Woman Inspector stretched far beyond the investigation of specific complaints (of which 2,014 were received in 1913), or the following up of contraventions serious enough for prosecution.

Seeing that over 10,000 workplaces could be inspected by the women officers in the year, and

that in each one the name and address of the local Senior Lady Inspector was affixed on the abstract of the Acts, a great deal was gradually done to give the women workers that access to a Woman Inspector that they so earnestly desire. Much more than is generally realised was added by the fact that these officers of the Department systematically sent a letter of advice, instruction, or caution—as the case required—to the occupier after an inspection, and that this had incomparably more attention from him than a merely formal notice of contravention ever had. A large part of the effect of an inspection is missed when a necessary instruction is given on a form instead of in a written letter. The latter not only secured, for example, better fencing and better ventilation, heating, and welfare, but it also stimulated reflection and aroused a new sympathy for the aims and objects of the Acts which bore sometimes surprising fruit. Replies of thanks from the employers asking for more help came in increasing numbers, and it was very pleasing during the war period to be told how heads of firms sometimes specially appreciated visits from married Women Inspectors, who were employed at that time by the Department in a temporary capacity. The influx, then, of many women employees, as dilutees or otherwise, into many factories, which had never previously employed a woman or girl in process work, awakened a good many employers to the special problems of supervision and welfare that arise in organising joint industrial employment of men and women, boys and girls.

As soon as the number of Women Inspectors

grew beyond the small figure necessary to cope with the appeals and complaints of the women workers themselves, my own endeavour was to allot their services, as far as practicable, to the various main women's industries over the whole country, in a scale proportioned to the numbers of girls and women employed. When the statistics of those employed in each trade became available, one could find the necessary clue. Textiles absorbed over 43 per cent. of the women and girls, clothing trades over 26·5 per cent., laundries 5·4 per cent., food preserving 4·6 per cent., warehouses, calendering, and finishing 2·2 per cent., earthenware and china works nearly 2 per cent. Other determining factors of course came in, such as special risks, questions of Truck or piecework wages, excessive seasonal overtime employment, and so on, but where these, or the women's own complaints, did not compel our concentrated attention, relative allotment of routine inspection was more or less governed by the proportional extent of women's employment.*

"While we can see," I said in 1913, "a great number and variety of deplorable contraventions of the actual requirements and spirit of the law and . . . apparently preventible suffering and overstrain and injury to life, limb, and health that is grievous to dwell upon (except for action in the way of removal), we can see also most clearly signs of improvement and the promise of much more. The promise lies in the fact that the movement to secure better conditions is not confined to any one class or group. The women and girls at last

* Annual Report of Chief Inspector, 1912, pp. 142-4.

begin to press their claims for a better life . . . not only by increasing appeals to Inspectors . . . but also by criticism of the limitations of the law and by fresh courage in organising and voicing their needs to the employers. Employers are initiating reforms not only as outstanding individuals and firms, but are beginning to do so, at last, by associated action and effort."*

Mrs. Drury (Miss Whitworth), formerly an Inspector of Factories working under a Senior in a division, sends me the following memory sketch of a characteristic special day—any day that had to be withdrawn from routine work in order to cope with a variety of miscellaneous claims needing prompt attention. It might have happened in 1912 or 1913:

"Many days were very full, all were interesting. . . . Let me suppose I was first off to investigate an accident in a laundry. With the prescribed report from employer and certifying surgeon in my hand, I knew that a girl of fourteen had had her arm drawn in between the hot rollers of a collar polishing machine. There was first the examination of the machinery to see if a proper guard was provided and maintained, then the examining of workers to find out the usual way in which the rollers were cleaned, and whether sufficient instruction had been given by those in authority about use of this dangerous machine; in short, why the accident had happened and how similar ones could be prevented. If a serious breach was found it was necessary to take sufficient evidence in support of possible legal proceedings—a general inspection of the whole laundry followed and notes would be

* *Ibid.*, 1913, pp. 70-3, 100-1.

carefully made as one went along. Finally, one would see the manager and discuss each point and instruct as necessary. A visit to the patient followed, probably in hospital, and her story would be heard. Light was then thrown on what it is difficult to realise without quietly seeing the workers alone. Help as to how to set about getting compensation was often asked for, and the worker could then be referred to the Working Women's Legal Advice Bureau. If there was any defect in the machine, so that risk of accident in cleaning it was high, a visit to the makers of the machine or their agents might be made, then or later, to try to persuade them to do their part—an educative proceeding even if fruit was slow in showing.

"It would by now be lunch-time, and one learnt to sometimes take the meal in odd places: it is not to be wondered at that when 'on leave' an Inspector enjoys a nice comfortable meal at home and is not a lover of picnics. The meal was usually soon over, and timed, perhaps, so as to be at the police court at 2 p.m. to lay informations against a firm, before the magistrate, a formal ceremony soon over. The next thing might be a visit to a large biscuit factory to investigate a complaint that a certain workroom was hot and unventilated. After taking the outside temperature I remember going to the manager's office, handing in my official card saying I was going at once to the factory. The representative knew his obligation, and I went straight to the block complained of. . . . Before it was time to send in my report two letters reached the Chief Inspector, one from the employer to say I had hurried into the factory, without even waiting to announce who I was, the other from a trade union official to say I had been quite half an hour talking to the manager in his office, so that, of course,

the workroom was well ventilated by the time I arrived, and my visit useless. An Inspector has all eyes on her; she may well go about her work warily and keep her eye on the ball.

"After such a day's work I once found a wire waiting for me at home from my Senior, 'Meet me Aldgate East Station midnight for overtime inspection.' This was thrilling, the Junior Inspector is always ready for an expedition of that kind . . . and I went to the appointed spot. We then walked to a tailor's house in a street full of these workshops, having a borrowed lamp. . . . I went to the basement with my lamp, and my Senior went upstairs to an empty dark workroom, then we met together in the sitting-room, where there was a mass of unfinished coats and trousers evidently thrown down in a hurry; then in the bedroom we found, in bed, fully dressed, a little girl of fourteen I had seen before. . . . Proceedings followed, but these entailed more days' work, for the employer disappeared, and was traced with much difficulty. . . . It was 2.30 a.m. before we reached home that night, but what play could give more insight into some of the ways of man than a good day's inspection?"

Such days and nights of work of a Junior Woman Inspector, working in a division as part of a well-organised staff under a Senior, show the unity that lived on in the branch from its earliest years. The chief difference that came with the years was in getting to closer, more detailed, grips with the mass of work to be done. Perhaps pioneering risks became less evident, but initiative in devising methods remained a strong need, and variety and human interest continued equally present.

The thoroughness that persisted in investigation

of complaints and in special enquiries is roughly but picturesquely expressed by the remark of a trade union secretary to a Woman Inspector: "I know you; you belong to the same lot as Miss ——. I remember when she came down to our place, long ago, like a ferret in a rat 'ole, she were." It was of the same Inspector that a girl in a factory once said to the deaconess of the parish, "I am glad when she comes to our factory, she makes me feel so safe."

To another Inspector, a Senior in her office, once came seventy or more mill girls, in shawls, straight from their mill, bent on redress of a complaint; twelve came into her room, the rest were on the stairs and extended down into the street. It was not often so many arrived at once, but peace of some degree in the factory generally followed on deputations of this kind.

When it became known that my work was nearly finished, and retirement imminent, a trade union organiser came to see me at the Home Office. It was to bring farewell messages from the workers, and I said how very much I was touched by such messages when I had personally seen so far less of them in recent years in the factories than I could have wished. "They knew you from the Women Inspectors whom they did see," was the instant reply.

"There is nothing you cannot ask and expect of the British worker, man or woman—they have ability for anything," an employer said to me in the year following the War when I talked with him about the women's wartime work during his

convalescence from severe illness due to overwork on munitions in his foundry.

Ability, loyalty, and an understanding heart—what a foundation this country has, in its workers, led by such employers, on which to build up beautiful industries in the future!

CHAPTER VII

THE WAR AND WOMEN SUBSTITUTES; NEW LIGHT ON HOURS, LABOUR-SAVING, FATIGUE, FOOD, AND EFFICIENCY

"Lo, strength is of the plain root virtues born:
Strength shall ye gain by service, prove in scorn,
Train by endurance, by devotion shape.
It is the offspring of the modest years."

THOSE who have had patience to go with me so far, in gathering illustrations of the conditions under which women worked in factories down to the eve of the War, and who agree with my conclusions as to the spirit and character of the women themselves, will perhaps follow on with me in applying the words of George Meredith to their achievements in the years from 1914 to the close of 1918.

Unless one turns back to the very numerous documents, official and unofficial, relating to women's industrial war work, it is not easy, at the close of the year 1921, to recall the full measure of pride expressed by the nation in what the women did for it in time of need. Almost immediately after the Armistice all the munition workers poured out of the factories and the substitute women followed gradually, as the demobilised men returned to their industrial occupations. A tide of industrial activity then rose and re-absorbed practically all available industrial women in their own normal trades. The tide turned suddenly in June, 1920, and increasing

unemployment in 1921 has dimmed the memory of their achievements.

Many a non-official observer, unfamiliar with the great extent and variety of skilled manufacturing work, or with the heaviness and roughness of much of the less skilled work, done by women and girl industrial workers before the War, was astounded by the ability with which women turned to the new kinds of work. "Not only," said one such observer, "has the War provided an incentive to women's work on a scale never dreamt of in times of peace, it has caused women, more particularly those engaged in new occupations, to realise as they have never done before their own capacity."* The old barriers against their employment on work suited to them and valuable to the community were, for the time, steadily and firmly removed one after another, and with surprising rapidity when guidance of State officials was applied to this removal. Women in the factory realised—some with astonishment—that they were entitled to high praise, and to hold a new confidence in themselves through the natural capacity and zeal shown by them; first, in intensified production in their own old industries† of unheard-of quantities of cloth,

* Article on "Women and Industrial Changes," by Sir Clement Kinloch-Cooke, M.P., in the *Nineteenth Century and After*, for December, 1915, p. 1405.

† In 1907, *textiles* employed 690,834 women and girls and 410,743 men and boys; *clothing* employed 487,167 women and girls and 181,862 men and boys; *laundries* employed 103,635 women and girls and 11,466 men and boys; *fish curing* and *fruit preserving* 29,677 women and girls and 11,440 men and boys.

articles of equipment, rations, and so on, for the Army and Navy; secondly (and later), in speeding up the supply of munitions of war. The emphasis on their merits as industrial war-workers was greater than had ever been explicitly laid on their ordinary life-preserving activities as homemakers and mothers. Nevertheless a new impetus was given, through this enhanced valuation of women, to public health work for mothers and infants and care of the child—or maternity, infant and child welfare, as it became customary to call such work.

To return to women as "substitutes," a new generation of adolescent girls had time to come into this form of industrial occupation for female workers—while the scope of "munitions of war" grew until they nearly engulfed ordinary peacetime kinds of production. These girls had never known anything but wartime manufacture. They also had what very few British girls before them had had under the factory system, opportunities for training by intensive instruction, and they laid hold of these opportunities with remarkable power.

A new version of an old couplet came into my mind on thinking over an incident in a remote rural district when, one evening in the fourth year of the War, a friend of mine spoke to a village girl on her way to a meeting at the lately founded Women's Institute:

> "'Where are you going to, my pretty maid?'
> 'To hear of substitute women,' she said."

The girl spoke as if it were a subject of lively interest to herself, and one that would of course interest any intelligent human being. "Women substi-

tutes!" What could anyone have made of such a term before A.D. 1915? Of butter or leather "substitutes" we had heard, but not of women "substitutes." And yet many books were written about them in the last three years of war. Books that will be studied by historians of the future seeking to explain the extraordinary growth during a critical stage of the War—when millions of men had been taken away from the possibility of production—in the supply of shells and guns to the waiting artillery batteries; in the inexhaustible production of aeroplanes; in the fitting and refitting of the Army with its boots, its razors, its surgical dressings, its millions of tins of preserved rations, its millions of smoke helmets; and in the gigantic supplies of the hundreds of other kinds of "munitions" all ceaselessly mounting in quantity.*

It is impracticable, and it is indeed unnecessary, to re-tell in detail here the story of the growth in production and in supplies, or to estimate exactly the share that women and girls took in making the expansion possible. Those who have not access to the literature can by a visit to the National War Museum put themselves in possession of the principal facts. Our concern is with the health conditions and the attendant circumstances of the women's employment. It helps, however, to a true impression to sum up shortly the main stages of their entry into new forms of work.

When men first trooped in their hundreds of

* See Memorandum on War Office Contracts, Cd. 8447, and "Labour and Capital after the War," by S. J. Chapman, C.B.E., pp. 73-6.

thousands, voluntarily, to the colours in 1914, industrial women found their outlet for the same impulse to serve the nation in intensified and extended work at their own more or less customary callings. They found it at the sewing machine, knitting machine, weaving loom, boot-upper stitching machine, tin-cutting power press, soldering bench, at tinning of meat, fruit and vegetable preserves for rations, and so on. Even with this added intensity of their work and the lengthened hours of employment factory women could do "a bit of knitting for the soldiers and sailors"—so that some of them could say, "We never seems to get any rest, but if we did not do it, no one else could."* They had to play an indispensable, and, in some cases, a predominant part in supplying the Services with textile materials, clothing, blankets, mattress covers, with various kinds of bodily equipment, such as haversacks, bandoliers, light leather, and miscellaneous small metal articles, and with tents, and all kinds of general equipment, some time before their share in the production of "munitions of war" in the form of ordnance, ammunition, aircraft, chemicals, etc., was even thought of. And claims for women's aid in the general service of the home community, in transport, distribution, clerical and commercial work, were strongly pressed before the great part they were to play (chiefly by aid of dilution of labour) in engineering and the larger metal trades came in sight.

A second phase in the industrial wartime employment of women came with the first thoughts of

* Annual Report of Chief Inspector, 1914, p. 45.

the "substitution" of women to release men for military service in the less essential manufacturing industries, next in industries essential for national needs, and in those where important export trade could (it was then believed) be developed or maintained.

At the request of the Army Council, the Home Office and Board of Trade began a series of conferences with associations of employers and workers to consider what reorganisation of work might be necessary to free as many men as possible. This work, requiring some diplomacy, was largely under the guidance of Factory Inspectors, men and women, and it was necessary to negotiate temporary suspensions of recognised trade union rules, at the same time providing safe and suitable conditions for the women employed in processes that were new to them, and heretofore arranged to suit men's different ways of working. Agreements were secured in a number of trades, including hosiery and other textiles, boot and shoe manufacture, leather tanning, woodworking, baking, earthenware and china manufacture, printing, and glove making.* These agreements aimed both at preventing misunderstandings and dislocations at a critical time, and at getting security for future maintenance of the established standard of the life of industrial workers.

* See Annual Reports of Chief Inspector for 1915, 1916, and 1917; collection of Pamphlets on "Substitution of Women in Industry," 1917, and Home Office Memorandum on Substitution of Women in non-Munition Factories, 1919.

Orders, known as "Emergency Orders,"* were made by the Home Office, allowing relaxations of the law relating to hours and times of work of women and young persons, both in munitions and non-munitions industries, to meet the exceptional circumstances of the time. Certain fresh safeguards for health or safety were embodied in these Orders, of which foremost was an obligation laid on the employer to provide means for preparing and taking meals at the works, and next supervision by competent women to maintain good conditions.

There were certain large and heavy trades where no agreements between employers and workers could be arranged owing to lack of organisation on one side or the other, either of employers or of workers, and here the Inspectors closely guided the course of replacement of men and substitution of women—*e.g.*, in flour milling, rubber manufacture, oil and seed crushing, soap making, sugar refining, paper making, cement making, and in gasworks. In all these "non-munition" industries—which tended more and more to provide material of war, and thus to become technically "munitions" as the War progressed—they advised employers on the necessary modification and reorganisation of processes, as well as on good conditions for production. In the factories, where women had not before been employed in process work, a noticeable solicitude was frequently shown by the employers and managers for protection of the health and safety of the women, and all paid tribute to their adapta-

* These were made under Section 150 of the Act of 1901, providing for public emergency.

bility and natural quickness, as well as to their fine spirit.

It was in a large shell factory, early in 1915, before the immense development of the Ministry of Munitions, that a foreman said to me as we stood watching the then novel and arresting sight of numerous women and girls intent upon their work at lathes, "There is more in this than people think; women have been too much kept back." Several Inspectors said that the cotton workers, set free by unemployment in their own great trade, particularly enjoyed their new work in shell making, and found it less heavy, and conditions better, than in the textile factories. Munition factories in Birmingham profited early in 1915 by a temporary depression in the Staffordshire Potteries, receiving contingents of intelligent women from gilding and painting shops—high-grade labour—for the new work. In Lancashire one heard of young women proud to have learnt how to grind tools and set machines. In wire-drawing and engineering trades an Inspector said it was remarkable, considering the half-heartedness of the initial experiment of employing women, how general was the satisfaction over its success. It was an everyday occurrence to be told frankly by foremen that "the women are doing very well indeed, much better than I ever thought they could."

Then came the third and, technically, the greatest experiment in women's employment during the War, under the organisation of the Ministry of Munitions—their concentration on engineering and munitions supplies with much dilution and with

highly specialised training in processes. It was this stage that led not only to the immense additional power in repetitive production, but also to the discovery in engineering, by enthusiastic "dilution" officers, of certain processes requiring manual dexterity and delicacy of touch, in which women could do better than men, and some even which women alone could do.* This phase can only be fairly studied in published documents, catalogues, and illustrations issued by the Ministry of Munitions, and at the National War Museum. It was under the Ministry of Munitions that the first systematic attempt was made to superimpose personal conditions of welfare—an essential for good output—on the general hygiene of environment in the factory already required by the Factory Act. And one of the earliest steps taken by Mr. Seebohm Rowntree, the Director of Welfare, appointed in the close of 1915 for "controlled" munition factories, was to obtain through me from my staff of Women Inspectors a detailed survey of conditions actually obtaining in each large "controlled" and national factory, with our recommendations on the arrangements desirable for the welfare of the women and girls.† This work was carried out in 1916 and 1917, and it is touched on in my next and last chapter.

The fourth and final new experience for industrial

* See "Labour and Capital after the War," by S. J. Chapman, C.B.E., 1919; "Women's War Work," issued by the War Office, Chiswick Press; and Various Reports on Dilution issued by the Ministry of Munitions.

† See Annual Reports of the Chief Inspector for 1916, p. 9, and for 1918, p. 31.

women, during the War, came with the urgent need in 1917 and 1918 of trying to substitute them for men, not only in process work that was likely to be suitable for them, but also in many processes and manual work heavier than had yet been attempted—for example, in the forging of bullet-proof plates, in driving overhead cranes, in certain heavy foundry processes, in a few operations in shipbuilding yards, in retort-house work, in internal scaling of boilers, in ferro-concrete pile making, and in new varieties of heavy labouring work. None of these (surviving the experimental stages),* except possibly scaling of boilers, appear to be heavier or more laborious, however, than work done long years before by women in tin-plate works, in fireproof brick works, in timber yards, or galvanising works; and certainly none surpassed in dirt or disagreeableness the old work of women in such processes as gut scraping, rag sorting, or "breeze sifting."

It was chiefly in these last two years of the War that development of women's employment took place in chemical works, heavy metal works, and in gasworks. Some really interesting developments took place. In forge work—for example, in one factory making heavy tank parts—the whole of the process work was done by women, numbering 300; men, numbering six, being employed solely in keeping

* "Rightly unsuccessful are some experiments in unsuitable directions . . . in operating the tilting furnaces in brass casting . . . it was too exhausting even for short spells, and very few men coming fresh to the work can stand it for long at a time."—Annual Report of Chief Inspector, 1917, p. 12.

machines in running order. "The women work the furnaces, moulding presses, and do the grinding, besides trolleying, stacking, loading on to wagons, and women 'chemists' also take the temperatures."* Here close investigation (made by one of the "first-aid" Inspectors) showed that there were no signs of serious injury amongst the women. The same conclusion was reached by her as regards women drivers of large overhead cranes—a dangerous occupation, however, in which some women met with fatal accidents. A cement works in Scotland was run almost entirely by women's labour, and their employment in this heavy work had been made successful by the aid of mechanical appliances, the only men being rotary kiln men—doing very heavy and hot work, needing considerable training—besides foremen and engineers. At a large steel works in Yorkshire, where the managers were of opinion in 1916 that women would be useless to them, there were, in 1917, 300 employed to their satisfaction in yard work, painting, labelling, and crane driving. "Loading and unloading of ore is heavy, and can only be done by the women without injury if they take the work slowly and quietly."† Inspectors found that some women, either from the natural but dangerous desire to show their strength or to get through their work quickly, lifted weights far too heavy for them. A foreman, however, in charge of construction work at a blast furnace who had trained women under him, "spoke exceedingly highly of them, and said he would be willing to

* Annual Report of Chief Inspector, 1917, p. 12.
† *Ibid.*, 1917, p. 13.

undertake any ferro-concrete work with women only." They had made over 1,000 piles 31 feet in length; they were bending and preparing all the steelwork used in the construction of the wharf, bridges, etc.; they worked the stone-crushing machines and concrete mixer, stacked the piles when made, and discharged stone, iron, etc., from railway trucks. Managers of gasworks expressed surprise at the good class of women found willing to undertake this hot, heavy, and rather dirty work. In the severe winter of 1916-17, when women were first being tried in heavy processes in gasworks, a manager, praising their grit and pluck, said, "If they stick this, they will stick anything."

In such places good protective clothing and specially adapted implements, such as light barrows and shovels, automatic weight-lifting appliances, and other labour and fatigue-saving plant and machinery, played an immensely important part in enabling the women to do the work. Inspectors unanimously held that at no time had legislative protection for women, and competent inspection, been more needed than in these final years of the War, when women were eagerly pressing into processes and heavy labour of a kind new to them. There was generally an ample supply of women available, and the only places where one heard of shortage were in some of their old factory occupations, where conditions often remained at a lower level than in the new occupations, and where wages did not rise until later to meet the increased cost of living.

In 1917 and 1918 also, some marked development of women's employment took place in relatively

light processes, both skilled and semi-skilled, in certain non-munition industries, which were perfectly suited to their physical ability, and for which some intensive training was open to them in technical colleges. The most interesting examples, I think, were scientific instrument making, in which industry, by March, 1918, substitution of women had become general in some processes and frequent in others; and in leather-case making and fancy leather work. Especially in the former of these industries new openings appeared for women as works' chemists or in laboratory research at the factory, as well as in the manufacture of glass prisms, lenses, thermometers, and many metal processes. As regards the future, the Home Office Memorandum on Substitution of Women declared in 1919 that there were "good prospects for women in this industry."* Early in 1920, however, "the steady withdrawal of women from employment in men's industries that began after the Armistice was almost completed." And I was obliged to conclude at the end of the year that there was "as yet no fulfilment of the expectations that after the War a body of industries and operations offering a hopeful field of fresh employment would be open to women where their War experience could be turned to account. On the contrary, an automatically operating force has closed all these expected new avenues."†

As the number of Men Inspectors decreased during

* Home Office Memorandum on Substitution of Women, 1919, pp. 7 and 48.

† Annual Report of Chief Inspector, 1920, p. 16, and the Restoration of Pre-War Practice in Industry Act, 1919.

the early part of the War, through claims of military duty and other national service where their technical knowledge and experience was invaluable, the number of Women Inspectors gradually increased, but only to a total of thirty. Much of the almost incredible amount of work they managed to get through was done by conference with, and information and advice to, other bodies of workers—the Women Welfare Officers and Dilution Officers of the Ministry of Munitions, the Superintendents of Women's Labour in munition works, and the Local Advisory Committees (under the Ministry of Labour), concerned with the welfare outside the factories of the immense aggregations of workers who were drawn away from their homes into great centres for production of munitions of war. Some of them served also on various Central Committees, of which the two foremost were the Health of Munition Workers Committee and the Women's Employment Committee under the Ministry of Reconstruction. When the Ministry of National Service was set up, the main lines of the great task of fitting substitute women into men's industrial work were already planned, and much of the substitution was already carried into effect under the guidance of the whole Factory Inspectorate in co-operation with the Employment Department, Ministry of Labour; and when several of the Men Inspectors were "seconded" to the Ministry of National Service the work continued by co-operation between the Departments.

Much had to be done in bringing factories, and whole industries, up to the same standard in making

the necessary substitution. In some factories the advance was more rapid than in others—far more reliance being shown in putting women into positions of real responsibility. For example, in only one malting house was it found that a forewoman was in complete charge of the women's work, with technical responsibility for regulating the temperature of the kiln and judging the right time for "turning" the floors. And in an exceptional fruit-preserving factory output was doubled and engineers' repairs reduced by half for the season, when a forewoman was put in complete control, a control which included not only the jam-making department, but also the maintenance in good working order of machinery, boiler, and engine.*

Inspectors sometimes expressed disappointment at the limited confidence shown by employers in substituting women in the higher posts of industry, but enough was done to "suggest a fair promise of future development of women's natural aptitude for organising." The difficulty lay even more in that direction than in process work, through lack of sufficient opportunity for women to obtain broad and sound technical training in the short time available. In large munition works, however, in two ways useful examples were given of technical control by women; women "charge-hands," having gone through intensive training in processes, controlled the operations of small groups of workers, sometimes men and boys as well as women and girls; and in the work of Women Welfare Superintendents there was a tendency to develop their

* Annual Report of Chief Inspector, 1917, pp. 11 and 14.

responsibility in the direction of carrying out some of the functions of a manager.*

Although a large number of women came for the first time, from domestic work and from home life, into industry during the years of strongest demand for substitutes and munition workers,† a considerable proportion of the increase in these two classes came from the return to the factories of former industrial workers, and by their transfer from the less essential trades. The highest proportion of those entering from domestic work or home life was usually found in factories situated in localities where other industries were not present. For example, in two chemical works in the country it was found that half the women came from home life, one-quarter from domestic service, and the remainder from other factories. In a Manchester flour mill one-third came from home life, a few from domestic service, and many from miscellaneous factories.

It was in such places as these, where the substitute women were unfamiliar with factory life and with the safeguards provided by Factory Acts and Orders, that protection by a trained Inspectorate was found to be most needed. Two points of considerable interest came out in the complaints from women themselves. In the years 1914-15, when long and exceptional hours (whether entirely illegal or else sanctioned by Emergency Orders) were at their highest point, the women worked

* *Ibid.*, pp. 9 and 13.

† Who increased until they numbered 900,000 women and girls.

willingly; and they complained only rarely and in extreme cases. On the whole, there was a great proportionate rise, on the other hand, in the complaints relating to matters of sanitation and safety, 63·1 per cent. of the whole in 1917, as compared with 47·3 per cent. in 1913.

The working of excessive and irregular hours, a natural outcome of the confused haste for enormous production at the beginning of the War, seemed to bring new light to many employers on the uselessness of long hours and long, unbroken spells for continued large output, however great the generally prevalent willingness of the workers to help to their utmost. Already before the War, as we have seen in Chapter II., it was a commonplace in Inspectors' reports that the strain of the legal twelve-hours' day of absence from home* was too great, having regard to the home duties of most women, who had frequently also a long distance to travel to and from work. In the first year of the War the Inspectors showed that the main resistance to excessive overtime came more from the employers' side (in spite of exceptions among them) than from the workers. In a Crown factory the experience was "that any lengthening of the day, beyond 6 p.m. and a total of eight and a half hours' work daily, exhausts the workers, and is of no advantage in increasing output. . . . A well-known wholesale clothier employing a thousand women on Government contracts gave it as his well-considered opinion that the full period allowed under the Factory Act . . . is

* Ten and a half hours net and sixty hours weekly maximum.

sufficient, and any work beyond this is useless: it exhausts the workers and does not pay. . . . The manager of a powder-bag factory . . . found, after some weeks' experience, that the pieceworkers were making less during overtime than during the normal period of employment. . . . A cardboard box manufacturer told me he had put his workers on shorter hours only to find that their output and earnings were equal to those on the full factory day."* The interesting and very valuable researches made by scientific investigators for the Health of Munition Workers Committee and for the Home Office regarding fatigue, did but amplify and give scientific confirmation to the commonsense reasonings and conclusions of many manufacturers about hours of work. Nevertheless, at the beginning of the war-time pressure, it was clear that some deviation from the fixed Factory Act limits was necessary to counterbalance delays in getting out contracts, dislocations in movement of supplies of materials, and other interferences with a continuous run of work in making up articles. The Emergency Orders granted to numerous individual firms at the beginning were unquestionably necessary. Later, as experience grew, it was possible to standardise these for whole industries and groups of industries, greatly to reduce night work and overtime, nearly to abolish Sunday work, and ultimately to prohibit the night work for young girls under sixteen and for boys under fourteen years, that had been temporarily permitted at the outset of the national emergency. The new evidence gathered by scientific investigators gave

* Annual Report of Chief Inspector, 1914, pp. 40-41.

increased strength to older humanitarian arguments, as well as fresh point to the conclusions of certain practical managers that excessive hours without regular intervals defeat their purpose of speeding up production. The experiments that were made, under Home Office orders in various shift systems,* showed how increased output might, in times of pressure, be obtained from limited plant and machines without exceeding the working powers of the delicate "human machine." The finding of the Health of Munition Workers Committee in 1915, that the strain of long hours had not, so far, "caused any serious breakdown among workers, though many statements indicative of fatigue had been received," was confirmed by reports of Factory Inspectors coming from all parts of the country. No marked increase in sickness rates could be found, yet among foremen and managers, who were less able than workers to take time off, and among individual older men and women, there were cases where health certainly suffered from the strain. After the War was over an experienced Welfare Superintendent told me of great lassitude amongst girls under her care, and she said that it had been necessary to send a high proportion of them to holiday homes before they quite recovered their natural elasticity and capacity for a full ordinary day's work.

Women's weekly and daily totals in the stress

* Such as two daily 8-hour shifts, three 8-hour shifts in the twenty-four hours, and two 10 or 10½-hour shifts in the twenty-four hours. See Annual Report of the Chief Inspector for 1915, p. 9; for 1917, p. 7; and 1918, pp. 2-12.

of the earlier years of War, long and fatiguing as they were, rarely rose (apart from special aberrations which successful prosecutions did much to check) to the extremes too commonly reached by men munition workers. Forewomen and women superintendents were more often employed in the later than the earlier years, and thus were spared some of the excessive overstrain that at first fell on foremen and managers. In factories where the long double twelve-hour shift system with alternate weeks of night and day work for each shift obtained, evidence of absenteeism and poor timekeeping made it highly probable that accumulating fatigue and overstrain had been partly averted by the natural tendency of the workers to take an occasional day or half-day off. It was truly fortunate, however, for the ultimate health of the people that as strictness of discipline, in controlled factories, in enforcing regular attendance of the worker under penalty grew, some reasonable standardisation of shift systems and considerable development of canteens and other welfare arrangements had been secured.

By the end of 1917 it was evident that for whatever reason, probably through better wages, providing much better food than formerly, and through increased personal care of the workers in the factories, sickness among the women was not increasing, but rather diminishing.* The evidence given before

* In 1915 a woman working daily in a munition factory from 7 a.m. to 8.30 p.m., on Saturdays from 7 a.m. to 8.45 p.m., and Sundays from 8 a.m. to 5 p.m., besides spending two hours daily in transit to and from her work, informed an Inspector that she was able to work these

the Health of Munition Workers Committee was that sickness benefit was lessening, and I learned by special enquiry that an almoner's records in a large general hospital in a great munition area showed that as few as thirty women and girl munition workers had attended as out-patients in six months.

Even though much detail as regards the best daily and weekly period and spells of hours remains to be worked out by practical experimentation for different types of factory work with differing kinds and degrees of effort and strain involved, the large-scale demonstrations regarding conditions and output in wartime have both added to our knowledge and also popularly spread that knowledge. It may be doubted whether the full potential strength of the social motive in industry—the sentiment of national service—has been at all fairly grasped in its bearing on true success in industrial production. Yet the leaven is there, its workings can be seen, and it is the one unalloyed gain that came from the stupendous and terrible effort of production for "munitions of war." The new lights that this effort brought on the dependence of good output and efficiency on right adjustment of hours, labour-saving appliances, fatigue prevention, food, have

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long hours chiefly because of the good food she was able to obtain as the result of increased wages. She had an invalid husband and six children under twelve years to support. Although she paid a woman 8s. a week to mind her children and spent 2s. 6d. on tram fares weekly, still her wages allowed her to feed better than she had ever done before.

but a limited value for the commonwealth if the aims of industry continue to be "merely material production of wealth and things unrelated to spiritual values" or social ends.* Women's extended entry into industry from 1915 to 1918 did indeed bring social considerations into the conditions of work, and some of these things remain. Yet they can hardly last if they do not lead to "the ordering, the comforting, and the beautiful adornment of the State" in its organised industrial capacity.

During the time of the greatest zeal for introduction of women as "substitutes" into men's industries, and well on into 1919, it seemed almost at times to be forgotten how essentially non-economic and temporary both basis and framework of the introduction were. Except as regards some extensions within women's own traditional industries, women were in reality in these new places simply as "substitutes," and, in nearly all, under a solemn covenant that it was solely for the duration of the War. An entirely new peacetime departure is needed for application of women's freshly proven powers to new industrial developments. In the future women will surely attain their better industrial status not as "substitutes," not as secondary men, but in their own fields (with aid of better training), and also in other carefully chosen fields, as joint labourers with men. The War emphasised a very true and natural interchangeability of men and women for many emergencies. The new

* See "Labour and Capital after the War," already cited, p. 85.

"Science of Labour" has perhaps come at the very time of most need, with insistence on the essential complementariness of the industrial aptitudes of men and women.* There at least—in industrial labour—their complete fusion would mean an economic and social loss.

While the hopeful expansion in industry following very soon after the War lasted, there was a remarkable, though temporary, re-absorption of women into their own former occupations. They took with them certain great gains from their recent experiences. They brought into their old industrial environment new ideas of fellowship as well as knowledge of fresh processes and of better rates of pay; they brought strengthened capacity for trade union organisation as well as new ideas of the value of intensive training. Not least, they brought a new demand for better means at the works of preparing and taking sufficient food, which is the material foundation of all efficient labour.

We may here sum up the possible permanent gains to industry as well as to women themselves, brought from their wartime experiences in factories, ready for the time when expansion of trade again begins.

It has been seen that in many ways women have far greater powers of endurance, activity, and enterprise—quite apart from new forms of skill—than was formerly admitted or expected of them. We know that they gain in health by fresh kinds of outdoor and labouring work not previously customary for

* See above, p. 198, and "Science of Labour," by Dr. Josefa Joteyko, 1919 (G. Routledge and Sons, Ltd.).

them. We have seen conclusive evidence of their capacity to quickly become proficient at engineering tasks—with the aid of semi-automatic machinery that is often intricate—and of their powers of sustained interest in such work under great pressure for output.

The enquiries and valuable memoranda of the Health of Munition Workers Committee* brought out, more completely than any previous official reports had done, the practical importance of selective care in setting women and young workers on to work, as well as the need for the improved personal conditions and skilled supervision by women, that are considered in the next chapter.

In addition to the gain of a higher standard in women's own expectation as regards their conditions, there is a new atmosphere in the factories, traceable to the women's increased self-reliance engendered by the appreciation that has been expressed for their work and capacity. No one can realise this more thoroughly than Women Factory Inspectors, meeting it as they do on the spot, and there comparing past and present. In a factory where formerly a woman worker would not have disclosed the fact that she belonged to a trade union, there is a woman shop steward ready to come forward and show the Inspector round, the manager expecting her to do so.†

* Appointed in the summer of 1915 "to consider and advise on questions of industrial fatigue, hours of labour, and other matters affecting the permanent health and physical efficiency of workers in munition factories."

† Annual Report of Chief Inspector, 1919, p. 10.

There is a new outlook on the possibility of applying science as well as humanitarian motives to use and care of labour. To no workers is this more important than to women, with the dual claims on them of home cares and breadwinning. The studies of the Industrial Fatigue Research Board have a special significance in their application to women in industry.

Another gain from War experiences peculiarly affecting women—although it has also a much wider bearing—is the very considerable testing of the practical value of well-designed appliances, adapted machinery and lifting tackle, for saving human labour, quite apart from its power to lessen cost of production. The aim of lessening human toil for its own sake, not merely for commercial reasons, has a new interest.

Before the War there was for women and girls in industry, outside one or two ancient skilled occupations (such as weaving, high-class dress-making), so little arrangement for training that it was negligible. During the War, by special organisation of training for women substitutes and dilutees in technical schools and colleges and in instructional factories, women's technical and personal capacity was publicly measured. And for the first time national resources were applied, under the kind of direction that suited women, to adaptation of the means of technical training in process work to the results best obtainable from them. At last, there was a demonstration on a scale sufficiently large to make the truth incontrovertible, that women workers are not necessarily the less valuable for production

to meet the nation's daily need because their pace and natural ways of working differ from those suited to men.

And with all these new lights came also the political enfranchisement of women, which enables them to survey with new eyes the too passive and subordinate position that they have in the main hitherto held in industry. Though from time to time a set-back may occur, they are surely summoned to take their full share in the building up of a better industrial life for the people—as fellow-producers with men, but with their " other " point of view as guardians of the home.

CHAPTER VIII

FACTORY WELFARE AND ITS RECOGNITION BY PARLIAMENT; WORKS' COMMITTEES AND WELFARE MANAGEMENT

"The sweat of industry would dry and dye but for the end it workes too."

"THE sweat of industry!" It was in a factory where excessively hot, heavy, and humid work, in which women bore their share, was carried on that a foreman once said to a Woman Factory Inspector: "We are told that man should earn his bread in the sweat of his brow, but here we earn it in the sweat of the whole body." The saying implied a sense of the need of a new standard of control. It is with a new social way of control that this final chapter is concerned, and we were only at the beginning of seeing what it might achieve when the period covered by this book closes.

Labour of a sustained kind, bodily or mental, is, as it always has been, the lot of the greater part of civilised mankind, and on the wealth it produces depends the possibility of any means of ordinary welfare for the community. Since the dawn of history energy, and the sustained capacity for the essentially human function of work,* have been the test of racial quality, and the power of a people to

* "The word "work" appears to be the root in the diverse words "energy," "liturgy."

survive and develop has depended on power in some measure to socialise the use of that function. And yet, until the idea lately arose of analysing the psychological and physiological capacity of the human agent in industry, and of studying the rhythm of fatigue and rest, custom and instinct were the main, and sometimes the only, safeguards of the natural pleasure of exercising this function. Among the great majority of consumers of articles produced by the factory system there was, even more fixedly than among employers, a blind acceptance of the fact that:

> ". . . for them many a weary hand did swelt,
> In torched mines and noisy factories. . . ."

They had little means of knowing definitely, however, what it all involved, and it was a great encouragement to the Inspectors to see, as the facts came out gradually, through the publication of Annual Reports of the Chief Inspector and of police court proceedings, the growth of various societies for the help of the workers.

The overstrain, the overloading, and occasionally the misuse of the delicate human motor that has persistently characterised much of our factory production even by young workers, can, in some measure, be gathered from facts touched on in Chapter IV. The frequent lack of simple conditions and appliances conducive to energy and preventive of unnecessary onset of fatigue has been seen in Chapter II. And yet, in spite of all, the marvellous capacity for much contentment, sometimes even joy, in work never perished. "Weaving is a wonderful

art, you are never done learning," was a saying, expressing the enlightening power of thought, by a Yorkshire textile trade unionist, but the pride with which a woman weaver will inform you that she has been reckoned " a champion weaver " tells the same tale of the power that the exercise of skill in the old trades had over workers' minds (and thus over their bodies). And the spirit appears in far humbler workers, sometimes on apparently monotonous work; even more strikingly did it appear in the new processes opened up for women in the War.

That " created man is made to create, from the poet to the potter "* is an idea that in some degree, however inadequately, has always been implicitly accepted for men with their special aptitudes in exercise of energy. As for women with their dual service in social life, in the home as well as in productive work, realisation of the essential part that they played in industry was slow in coming, even after the development in the early part of the nineteenth century of textile industries on a great scale by aid of women and children. It needed the second great " industrial revolution," referred to in the last chapter, to make it plain to the whole community that a great deal of women's pre-War industrial work was either more skilled or heavier than had yet been generally admitted, and that, whether skilled or heavy, it was indispensable to the success and welfare of the trades into which it entered. During that testing time the share that women workers held in the racial reserve endow-

* See the Sayings of the Vicar of Morwenstowe in the first number of the *Beacon*.

ments of endurance, adaptability, and capacity for labour also came out clearly.

While it was the unprecedented part played by massed factory production in the Great War that brought the essentially social service rendered by industrial labour into public recognition, it was the prominence of women's share in it that finally made legal provision for " welfare " possible.

The injurious manner and extent of employment of children in the beginning of the factory system had, as we have seen,* first made possible any effective Parliamentary intervention to secure elementary conditions of health and safety in factories and workshops. The experience and its lessons were not forgotten, and it was almost common ground between employers and the State in 1916 that rapidly extended employment of women and girls must be accompanied with measures for their welfare and safety to prevent injurious consequences for society.

Voluntary welfare, with here and there a little co-operation from science, had grown up into a conscious " movement " in industrial life in our country during the twenty years preceding the War. In its principles it differed little from those of which Robert Owen reminded his fellow-manufacturers in 1813 when he showed them that, just as power-driven machinery was improved by being carefully tended, kept clean, and well lubricated, so the far more delicate living human motor could be benefited if carefully studied and well cared for. Yet the only possible basis on which the move-

* See Chapter IV., p. 94.

ment could grow vigorously in such a factory system as that of the nineteenth century was first laid when State administration began effectually to enforce on all employers alike national standards in hours, health, safety, defence against industrial diseases, and finally against sweated wages.

Those reformers and administrators who wrought ceaselessly between 1892 and 1914 to give effect to new safeguards of health in the factory surroundings of the worker were laying foundations, better than they knew, for social aims in factory administration. The Women Inspectors, indeed, as we have seen, had persistently invited employers to pass on from hygiene in the factory to better care of the welfare of the workers, but they never doubted that completion of the former was the indispensable groundwork of voluntary welfare.

A new stage and a new opportunity for the factory system in Great Britain began when, in 1916, Parliament first made provision for "securing the welfare of the workers,"* and when (almost at the same moment) statesmen and administrators called for the aid, in many ways, of joint industrial councils of employers and workers who could follow up welfare provisions and help to make them correspond to the needs of the workers. The legal provision by itself could carry "welfare" only a little way: development of the means of co-operation between workers and employers, and between both of them and the Factory Inspectors and scientific investigators, was an indispensable adjunct in this

* Police Factories, etc., (Miscellaneous Provisions) Act 1916, sect. 7 (1).

new enterprise. The very unrest and suspicion that met some of the first systematic attempts of managers at welfare supervision, in controlled munition factories lacking representative works' committees, made that plain.

The legal provisions in the Act of 1916 were framed, of course, for the welfare of both men and women workers, but it was the large-scale introduction of women substitutes and dilutees into men's trades, and their migration by tens of thousands to centres of munitions production, that, in fact, had made the starting-point for the new socialising measure. And so, at last, in factory production we had come full circle, and " the guiding ideas of women in regard to conditions essential for a good industrial life of both men and women " could begin to influence industrial life, openly and unofficially, as well as through Inspectors and a few enlightened employers. Scientific aid from many investigators could also be brought to bear effectively on the task of civilising working conditions when a true social structure in factory production had once begun.

In England, work of a scientific kind for the reform of the factory system had been hitherto occupied chiefly in the directions shown in the chapter on dangerous processes. From the Continent of Europe* came the earliest direct researches of physiologists and psychologists into causes and prevention of industrial fatigue and into the possi-

* From France, Belgium, Italy, and Germany; see Annual Report of Chief Inspector, 1903. In 1913 the Home Office appointed Professor Stanley Kent to make physiological investigation into fatigue in industry.

bilities of vocational selection of workers; while from America came " motion study " and the work of the efficiency expert. True to the humanitarian bent as a whole of her factory legislation, it was Great Britain that first planned a statutory basis for promoting the welfare of industrial workers. It is open to one to wonder whether this factor was not decisive in leading to the great place given in the Peace Treaty to constructive work by the League of Nations for the social welfare of labour.

Before attempting to sketch the legal and administrative position in promotion of the welfare of the factory worker in Great Britain between 1916 and 1921, the completing of the outline of the story told in this book requires a backward glance at some of the experiences of the Inspectors while voluntary welfare grew up. Without the pioneer work of employers by works' welfare committees and other agencies encouraged by the sympathy and advice of the Inspectors, and without the long succession of Inspectors' Reports recording that work, the legislative step would have been difficult if not impracticable.

We can neither here treat the subject of factory welfare systematically, nor attempt to cover ground now being gradually covered by textbooks and pamphlets. We are concerned simply with the voluntary growth of attention to the matter before 1916 in an economic system that was built up on a theory adverse to its implications, and with the immediate outcome of the new legal experiment.*

* For textbooks and pamphlets it may suffice to refer readers to the " Health of the Munition Worker," a hand-

When the great pressure came for munitions and all the indispensable commodities in the field of war, the voluntary movement had gained so much experience that it was possible to make strikingly rapid application of measures and means for canteens, first-aid and ambulance work, cloakrooms and washing conveniences, suitable protective clothing for very varied processes, rest-rooms, recreation for the large new aggregations of workers in crowded centres, some trained welfare supervision—in fact, for all the specific subjects that were included in Section 7 of the Act of 1916 as primâ faciê necessary to the health and welfare of the workers. Selection of workers for particular types of operations and some increased care for prevention of unnecessary fatigue naturally followed. The scattered efforts and examples, all over the country and in every kind of industry, were rapidly wrought up into an officially guided movement by the combined efforts of Departments concerned, under the Home Office, the Ministry of Munitions, the Ministry of Labour, and last, but not least, by the Canteen Committee of the Board of Control (Liquor Traffic), and by the non-executive Committee above-mentioned, the Health of Munitions Workers Committee, with all its important published memoranda.

Before all else in the welfare movement it was the work for canteens, for access by the hard-pressed munition workers to something like adequate food decently cooked and conveniently served, that was

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book prepared by the Health of Munition Workers Committee, published in 1917, and to the " Welfare " pamphlet series issued by the Home Office, 1917-21.

the decisive factor in enabling them to sustain their intense fatigue. The great need in many places for tolerable means of preparing and taking food at or near the works had been the earliest and most strongly expressed of all the demands of the woman worker for elementary means of welfare. For years the most frequent of the complaints I had to classify in my annual reports as " outside the Acts " was that messrooms (or food and drinking water) were not accessible or not well maintained; and many workers found it hard to understand or believe that the law did not intervene in this matter except where dangerous processes came under special regulations or where poisonous materials were handled.

The success of the movement for canteens in those years of war strain has effected a completely changed outlook on the question in the factories themselves, that makes the past conditions remembered by the Factory Inspectors—especially between the years from 1893 to 1903—seem now wellnigh incredible. For no workers was this change more greatly needed than for the poorly fed women and girl workers. The first time, however, that I specifically used the word " welfare " in an annual report in connection with lack of means for the personal well-being of the workers was, not as regards either food or rest, but as regards the incomprehensible general failure to supply means of maintaining personal cleanliness, which came especially to the front in 1899 in the early pressure of preparing soldiers' rations in another war. The failure to include the matter in the English Factory

Acts was the more difficult to understand when one saw how carefully access to washing conveniences was provided for in French and German codes. "Employers," I said, "who have sufficient . . . interest in such matters to make the experiment, quickly find their profit in provision for the welfare of their work-women, in particular those which tend to raise the whole standard of self-respect among them." And again: "The need for washing appliances, increasingly felt among the women and girls, has a moral and social value as well as a strictly hygienic aspect. It is a matter for surprise how frequently the effort is made in the most unlikely and difficult circumstances by working women to turn homeward with a neat and cleanly appearance."* On the moral and social side, the right and claim of the woman worker to have her conditions of work supervised by competent women appeared to the Woman Inspector, from the outset, the only effective remedy for many kinds of complaints that, like the lack of canteens, were "outside the Acts."

And trained women's superintendence was also conceded during the Great War, not only in the controlled and national factories, but in the factories where the Home Office granted exceptional hours under an Emergency Order or urged the substitution of women to secure the release of men. It was contended by a workers' delegate, in 1917, at an inter-city conference in Sheffield of local advisory committees, that "welfare" is an ethical and spiritual matter more than it is a material one;

* Annual Report of Chief Inspector, 1899, p. 258, and for 1904, p. 243.

she was sure that working women would always press for the former elements. However strongly one sees that both material and spiritual or ethical elements are inherent in the very meaning of "welfare,"* one must pay tribute to the prominence of the latter element in the complaints from factory womanhood.

In 1900 I was able to quote, from the Inspectors, testimony to the growth of instances of welfare supervision in factories, where women of intelligence, refinement, and kindliness are placed as superintendents or forewomen and exercise a wonderful influence for good over the workers whom they control.† At the same time instances were shown of very great need for such control, and in various subsequent years it appeared that it was frequently from such places that serious complaints came. In great food-producing, sugar, confectionery, and other factories, the names of manufacturers of world-fame are well known as pioneers in this movement, but in the older and greater textile industries employers were slower in taking a definite share in it. When, in 1907, some striking examples were given of introduction into large textile mills of *trained* women superintendents (the first note of a professional stamp in such appointments), the aim was specifically given as "an experiment . . . to bring about a higher standard of civilisation." The manager explained that he was of the opinion that "a woman's in-

* As may be seen in the literary use of the word by Chaucer and in the Authorized Version.

† Annual Report of Chief Inspector, 1900, p. 356.

fluence was needed in his mill and that he proposed to appoint a woman whose duty it would be to supervise health conditions . . . ventilation, temperature, humidity, cleanliness, the registration of all Home Office requirements, the passing of the children by the certifying surgeon, the supervision of dining-room and catering arrangements, and occasional visiting of cases of distress." A doctor was also appointed, arrangements were made for special access of the children to public baths, for good meals for the half-timers; and various other amenities followed.* It was frequently the motive of improving the standard of health that caused thoughtful employers to embark on these schemes, and always in such cases efforts were made to provide access to wholesome food at prices within the reach of the workers. The other side of the picture may be seen in the following words from Miss Whitworth in the same year:

" Young girls of fourteen frequently go to work with only three-halfpence or twopence with which to provide their dinner in Poplar and Hackney; this kind of worker is greatly in need of some place like the ' Welcome Institute ' (Isle of Dogs), where she can get a proper meal for that price. Although some employers have dining-rooms provided with ovens and women employed to cater for the workers, there are places where the girls have not even seats that they can use in the meal-time, and they take their food sitting on the floor, in paper-sorting works, in laundries, in rope works, and others; cloakrooms are almost unknown. One finds hats and coats bundled together in passages, under

* *Ibid.*, 1907, p. 188.

tables, and along the walls of workrooms and anywhere except in properly warmed cloakrooms. When girls come a long way to work they do need to have somewhere to dry their clothes and boots on wet mornings."*

For years, and perhaps most pressingly from 1906 to 1913, the Inspectors had emphasised the importance of these and allied matters, and the urgent need for reform. Their communications, as far back as 1902, aroused outside sympathies as well as the attention of employers: the Christian Social Union Research Committee made independent enquiry into it, and this stimulated among various social workers a movement for opening simple dining-rooms in localities where there were many workgirls employed in factories or workshops far from their homes, and in these some of the help and comfort of a club was provided. The evils of lack of any care, supervision, or comfort at mealtime pauses was strikingly obvious where workers were legally bound to be excluded from workrooms during mealtimes because of the presence of dust, acid, or other matter in the manufacture, making the place unsuited for the consumption of food.

It would take too long to quote from records of our earlier work in this connection. The evil was sufficiently brought out through the enquiry in 1911 (already referred to) by Miss Whitlock, M.B., into dusty processes in the Midlands. She said then:

"Absence of a messroom or of proper washing accommodation was the rule in the Sheffield buffing shops, and quite common in the Birmingham ones.

* Annual Report of Chief Inspector, 1907, p. 161.

The rule forbidding the taking of meals in these shops was absolutely neglected, and the conditions under which the women ate their meals were sometimes appalling. In combined asbestos and rubber works, where the dust of some rooms and the naphtha fumes in others might certainly suggest the desirability of a messroom, this was not infrequently wanting. It is, of course, quite common to find wet spinning rooms with numbers of workers sitting on cloths on the wet floor to take their dinner—and upturned tins in carding rooms—because seats or tables for the occasion, even where a messroom is provided, cleanliness, proper heating, and a cheerful appearance, are by no means common. At one factory the messroom was known amongst the girls as the 'dead house,' and certainly the resemblance to a mortuary was not imaginary. At another I found shortly before the dinner a temperature of 40° F., and was informed that the heating apparatus had been out of order for some time."*

The formation of two dinner clubs by an association of factory girls in Sheffield followed on the Inspector's systematic instructions to occupiers that the section enjoining exclusion from dusty workrooms during mealtimes must be obeyed. Similar results followed the same kind of concentrated work in other towns. Employers gave some help to the movement, and it developed into greater local activity during the great production of munitions.

Many interesting examples reported in the years 1908 to 1912, both of good and careful provision, and its total absence, drove home the importance

* *Ibid.*, 1911, pp. 138-9.

of direct endeavour by manufacturers to promote conditions of ordinary human welfare in their factories for the workers who spend so many hours in them. One Inspector would comment on the "pathetic gratitude" of rag-sorters for a decent mealroom in districts where any provision at all was rare:

"The subject is one of the utmost importance for workers, who often leave home at 5.30 a.m., or earlier, and have nearly an hour's walk. They have to take their food with them, and the only means of warming it is the steam-heated sink in the yard. . . . I counted nine confectioners' and fried-fish shops in three-quarters of a mile in a main road all besieged by workers during the dinner hour."

Another Inspector would urge that nothing could exceed the discomfort in which meals were often taken, the food on the edge of a workbench covered with work that must not suffer from contact; the worker seated on the most unrestful kind of stool.* In 1909 and 1910 Miss Escreet repeated the special requests of cardboard-box makers for seats to obviate (as they said) the necessity for sitting either on the table or the floor at mealtimes—their work being mostly done standing, and messrooms and cloakrooms being then almost unknown luxuries in that industry. "In the large places gas-cooking stoves are provided and a woman is kept who serves the workers in various ways, warming their meals, heating their glue, etc., but for these benefits the workers generally pay at least in part."

Just as the question of proper canteens and mess-

* Annual Report of Chief Inspector, 1908, p. 134.

room arrangements was bound up with organisation and good welfare superintendence, so also did other items appear to be associated with it in the Inspector's reports—*e.g.*, suitable protective clothing for those engaged in dusty or dirty processes, in excessively wet or excessively hot processes, in use of acid or caustic liquids, or in working about dangerous machines. Cloakroom arrangements and their care were specially closely bound up with the possibility of securing responsible supervision—and for years in many places the difficulty of getting any adequate attention to seating arrangements proved on the whole one of the most intractable problems that the Inspector had to deal with, so long as seats remained a matter "outside the Acts." Complaints continued year after year of the strain of standing occupations, of disciplinary refusal by foremen to allow workers to sit down at all during spells of work, of vibration jarring the nervous system through ordinary chairs or while standing. Seats remained in this category down to 1916, and great must have been the loss to industry as well as to individual workers through the long years when conservation of strength by reasonably good seating arrangements was widely neglected and sometimes ignorantly opposed by managers.

In 1907, for example, repeated complaints were received of lack of seats, and some could not be remedied through unwillingness of employers to accept advice on the subject. In a factory where in the previous year the injury to health to girls had been shown and advice tendered, it was found

in 1907 that stools had been provided for only thirty-seven out of three hundred little girls, most of them being between thirteen and fifteen years of age.

"Many looked delicate and weary, and said they got very tired before the end of the morning and afternoon spells of work, standing as they did for five hours at a time . . . some seemed to be suffering from swollen legs and feet or from debility. . . . Reference was made to the certifying surgeon, who suspended one from employment and urged the employer to provide seats for the others. After much persuasion the employer undertook to increase the seating accommodation, yet when the surgeon attempted to qualify his certificate with the proviso that the girl must be provided with a seat this employer said that any girl whose certificate was so qualified should be discharged." In such ways did the need for simple direct regulation of these matters become abundantly evident. In a spinning factory where seats had been provided for the preparers, one woman told the Inspector that she had left a factory where she was earning sixpence a week more in order to work at this factory where she would have a seat, and "now she was ready for another day's work every evening."*

"The custom of employing half-time children on their feet 'buttoning' at shirt factories in Lancashire, on the alternate day system, so that they stood for ten hours on the alternate days, was found by the Women Inspectors to be most unsatisfactory. In a few factories seats were provided at their request by the occupiers, but in some places per-

* Annual Report of Chief Inspector, 1907, p. 173.

suasion failed: the children worked rapidly, and it was said they could not get through the same amount if they sat at tables."*

One felt how closely all this was allied to the overstrain touched on above in Chapter IV. in weight lifting and carrying, and through overpressure in various ways. In its many manifestations overstrain of young workers seemed elusive of direct prohibition, and more amenable to control by well-developed welfare superintendence in touch with a department thoroughly versed in prevention of industrial fatigue. Constructive work starting from a rational basis apparently becomes inevitable for administration after the first stage of prevention of gross abuse has been passed.

First-aid and ambulance work in the factory system was clearly a foremost point in welfare work, and has already been touched on in the chapter on dangerous processes and accidents. Development of Workmen's Compensation Acts greatly strengthened the argument for it among enlightened managers, and in many large Midland factories a well-equipped ambulance room, with a fully trained nurse, had afforded considerable experience before the War came, bringing new developments of this safeguard of health and life as well as of limbs. Even in 1911 a Factory Inspector wrote:

"On visiting a large factory recently I was interested to find a rest room in which there were four couches. Two of them were occupied by girls who were sleeping soundly. I was informed that this room was often used by girls not feeling well

* *Ibid.*, 1909, p. 148.

or tired, and that the renewed vigour with which the workers returned to work after a few hours' rest soon made up for the loss of time."*

In 1912 a large factory in Coventry, where hundreds of young girls were employed, was reported on by Miss Whitlock. A nurse was employed by the firm whose sole duty was to look after the health of the workers, and she had a small surgery at which she attended to any slight injuries—of which there were forty-nine on the day of this inspection. A doctor called daily and could be consulted by the workers without charge. Mess-rooms, where dinners could be cheaply obtained, and an open-air swimming bath were provided. In a large surgical-dressings factory the plan was adopted of having a social welfare secretary to care for the health and welfare of the two to three hundred girls, and here a rest room was part of the equipment. The cleanliness of the workrooms was itself a lesson in hygiene. In the same year there were again examples given by the Women Inspectors, showing the boundless room for growth of general welfare work and of the more pressing safeguard of supervision of girls' labour by trained women superintendents. In a large printing works in a small provincial town, where 120 women worked among 600 men, an Inspector found no foreman and no women in charge. There had been a complaint of behaviour to the Inspector, and she found the manager anxious about the tone of his factory and

* "Hygiene and Industrial Employment," by Hilda Martindale. Address read at the Congress of the Royal Sanitary Institute in Belfast, January, 1911.

ready to welcome her visit. She urged the appointment of women overseers, and this was promised.*

In the year 1909 a step of some consequence to the movement was taken in the convening at Bournville, Birmingham, by Mr. Cadbury, of the first general conference of social secretaries, welfare superintendents, and manageresses, to consider the aims and results of their work.† At this conference some very practical and helpful papers were read. By invitation I spoke on the basis existing in the national standards laid down in the Factory Acts, for the working out in individual factories of the personal health and welfare of the workers, and I asked them to look into and consider fatigue and its prevention. Discussion arose on the means, legal and voluntary, for improving both the conditions in factories and the physical and industrial fitness of the workers. There was a marked gain in such meetings and discussions, leading as they did to the clearing up of ideas, that at that stage were bound to be a little vague, on the main objects of welfare superintendence and their relationship to the production of wealth. The majority of welfare supervisors present at the conference in 1909 would have been surprised if they could have heard the high estimate of their calling to be expressed in 1918 by Professor Urwick. "This is a skilled job," he said, "so skilled that it is beyond the scope of anyone who has not made a careful study of the conditions of it . . . it requires essentially detachment as well as knowledge." However high the estimate

* Annual Report of Chief Inspector, 1912, pp. 150-1.

† *Ibid.*, 1909, p. 122.

was to be, there was certainly room throughout for ancillary welfare workers as well, and these early conferences strengthened the professional spirit in the calling. Partly from them and also from the interest shown by leading employers came a new movement in the provincial Universities—following an older one within the London University *—to provide some training for such social workers by hygiene and social welfare courses and diplomas. This growth led again, in 1917 and also in 1920, through the war conditions of industry to conferences on training, officially convened at the Home Office, between representatives of Universities, employers, leading welfare managers, and the Factory Department.

Perusal of the pages, concerned with the increase of welfare work in the experience of the Women Inspectors in the Annual Report for 1913,† published but a few months before the great industrial upheaval of the War, gives a strong impression of growth in the employers' interest in welfare, and of the vitality of a desire among an increasing number of them to secure for employees much better conditions of work than can be laid down in an Act of Parliament. The value of this growth lay not only in the details of work done by the social secretary or superintendent in organising medical, dental, or nursing facilities for care of the health of the workers, methods of cleansing workrooms, organising messing arrangements, bathing and washing

* At Bedford College for Women and the London School of Economics.

† Annual Report of Chief Inspector, 1913, p. 100.

conveniences, suitable protective clothing, restful seating arrangements. Behind and above it all was the possibility of making the "social helper most important to the workers and a real help to the carrying out of the spirit of the Factory and Workshop Act. An Inspector may remind an occupier that his factory must be kept in a cleanly state, but unless there is some woman permanently on the premises who will organise and look into the details of the cleansing, and suggest contrivances for the purpose, it is seldom properly done. Four firms visited in 1913 had arranged classes for their work-people and . . . for technical training . . . most social workers had the initiation of social clubs in their charge . . . clubs for sports as well as gardening."*

In 1914 we passed from peaceful promotion of welfare to warfare, and a new note had to be struck immediately. "How greatly," said Miss Squire, "the army of industrial workers need a commissariat department to cater for them during their days of active service will perhaps be better realised now that the public attention has been rivetted on the victualling of our soldiers in camp and on the front. If 'an army fights on its stomach' is it not also true that a factory works on it?" The answer came promptly to this and to similar questions that had long been asked, apparently vainly, by the Inspectors about the needs of industrial workers. In an East End social restaurant, where the midday meal was served daily to a hundred workers from a neighbouring factory, the superin-

* *Ibid.*, 1913, p. 101.

tendent and her helpers had for years deplored the insufficiency of the dinner purchased by the young girls under sixteen, and they could scarcely refrain from supplying more than was paid for. "One day soon after the War broke out there was such a run on meat-and-vegetable dinners that the supply was not equal to the demand . . . the wages had that day been raised voluntarily by the occupier to the proposed Trade Board rate; the effect was immediate and continued . . . a striking answer to those who cling to the theory that an increase in wages is of no substantial value to a girl."*

By the close of 1915 an entirely new position and outlook had been opened for girls and women in industry. In demand for their labour, in wages, in conditions, and in the possibilities of their output, the situation had led to a "systematic introduction of hygienic safeguards that Factory Inspectors had advocated for many years . . . supervision of women by women, provision of means of personal cleanliness, proper meal and rest rooms and qualified nurses" in the factories. There was a "new general awakening to the dependance of sufficient output on the welfare of the human agent."†

This awakening was strikingly expressed in the formation of the Welfare Department by the Minister of Munitions, for promoting the means of such welfare in controlled and national factories. This department had as its first Director an employer experienced in the successful promotion of industrial welfare experiments in his own factories,

* Annual Report of Chief Inspector, 1914, p. 52.
† *Ibid.*, 1915, p. 15.

Mr. Seebohm Rowntree. At his wish I supplied him with detailed surveys of the munition factories, made by the Women Inspectors. Before the end of 1916 he was supplied with 1,396 surveys relating to the welfare conditions of nearly 200,000 women and girls, classified according to the degree of urgency for his attention: 31 per cent. of the factories were in the first and best class, 49 per cent. in the second, and 20 per cent. in the third class. In the second and third classes were placed factories lacking in varying degrees and combinations, means for preparing and taking food, cloakrooms and washing conveniences, first-aid or rest rooms, seats, and suitable supervision. One must remember that in many instances the workers travelled daily long distances with only defective means of transport, and most were working twelve-hour (day and night) shifts. Great progress was made during the year in so transforming the conditions in many of the factories as to qualify them for advance to a higher class. A great stimulus was given to supply of welfare superintendents by the forming of a panel of likely persons and by giving them access to intensive training. While mistakes were unavoidably made in the rush to supply the need, employers being free to make their own choice, a remarkable proportion of capable and a few highly distinguished welfare administrators were put up by the movement. Medical women, moreover, had, and made good use of, a new and important channel for experience as medical officers of great national factories.

The supply of surveys and reports from the

Factory Department to the Welfare Department, Ministry of Munitions, continued, while co-operation with dilution officers also developed until well on into 1917. One of the Medical Inspectors of Factories, Dr. Collis, then succeeded Mr. Rowntree in charge of the Welfare Department, and early in 1918 Miss Squire, Deputy Principal Lady Inspector of Factories, passed into charge of the Women's Welfare in that Department. Thus a kind of fusion of the emergency wartime department with the peacetime department for industrial welfare preceded the end of the War and the rapid closing of the munition factories that followed. The making of Welfare Orders by the Secretary of State had, however, begun in October, 1917, under the powers given by the Act of 1916.

In " The School Child " that Act was pleasantly described as a " little Police Act," by which " the Home Secretary obtained large powers to compel the provisions of many measures for the welfare of the workers in factories and workshops." It was there also truly designated as " in fact, a large extension of the Factory Acts," dependent in some degree on the reception given to it by the workers. The prompt issue of a summary of the operative clause of the Act, in " School Child Leaflet No. 14," is one of the many straws then floating about that one can gather up now, showing that a new wind of the spirit was blowing in the industrial affairs of the nation. As I said, however, at the Birmingham Congress of the Royal Sanitary Institute in 1920:

"Only after the Great War was it generally realised how largely the personal welfare and health of manual labourers rest on their own co-operation in . . . demand for, and use of all the new means placed by development of science and advancing humanitarian and Christian ideals at the disposal of industry, and how important it is to have trained technical assistance in developing the full use of all these means in each workplace."

A skilled workman in a large factory, president of his union (a craft union), and taking a leading part both on the works' committee and the district committee of the joint industrial council of his trade, said to me in the summer of 1920 that he believed that the workers had it in their power (if they could only see it), in co-operation with the employers, to do no less than recreate their work and surroundings.

At the time of the passing of the "little Police Act,"* in 1916, there was some apprehension amongst the few workers' leaders who took any notice of it that it might mean no more (at the worst) than some new kind of efficiency engineering or possibly (less objectionably) a mere revival of philanthropy by employers. Employers themselves appeared to be too busy to take notice of the Act before it was passed, and it quickly and quietly became law, the only amendments being such as to strengthen the provision for initiative by the workers in working out details.

The Act provided that, "where it appears to the Secretary of State that the conditions and circumstances of employment or the nature of the pro-

* 6 & 7 Geo. V., c. 31, A.D. 1916.

cesses carried on in any factory or workshop are such as to require special provision to be made at the factory or workshop for securing the welfare of the workers or any class of workers employed therein in relation to the matters to which this section applies, he may by order require the occupier to make such reasonable provision therefor as may be specified in the order, and if the occupier fails to comply with the requirements of the order or any of them, the factory or workshop shall be deemed not to be kept in conformity with the Factory Act, 1901." Meals, drinking water, protective clothing, ambulance and first aid, seats, facilities for washing, accommodation for clothing, and supervision were the subjects particularly specified as covered by the section, but power was given to the Secretary of State to extend it to other matters, and rest rooms have since been added.*

"Orders may be made for a particular factory or workshop, or for factories or workshops of any class or group or description." The first order, dated October 5, 1917, provided for simple welfare arrangements for workers in tinplate factories, with their rough and heavy processes in which women have been employed for many years.† The second order

* And have with great benefit to the workers been made compulsory in the fish-curing industry in Yarmouth and Lowestoft.

† The provisions were for suitable protective clothing, accommodation for clothing of women and girls under charge of a responsible person, a suitable messroom separate from the cloakroom, furnished with sufficient tables and seats with back rests, adequate means of warming food and boiling water and washing facilities, and the messroom

of the same date provided for a wholesome supply of drinking water at convenient points with suitable drinking vessels in all factories and workshops in which twenty-five or more persons are employed. The third order, dated October 12, 1917, was of great significance, providing in detail for first-aid and ambulance arrangements in large groups of metal factories, where the greatest number of accidents, fatal and non-fatal, are reported (including blast furnaces, copper mills, iron mills, foundries, and metal works). The same provisions were applied, in an order of November 8, 1918, to saw-mills and factories in which articles of wood are manufactured, the next greatest accident-producing group of works. First aid was, however, also required in various other classes of works, for which general welfare orders were made; for example, works in which bichromate of potassium is used in dyeing, March 22, 1918; oilcake mills, July 21, 1919; laundries, April 23, 1920; gut scraping, July 28, 1920; gutting, salting, and packing herring in Norfolk and Suffolk, September 9, 1920. By the beginning of March, 1921, fifteen orders had been made, of which ten made various requirements for particular industries. The interesting progress made in development of these general welfare orders may be followed in the chapters on welfare in the Annual Reports of the Chief Inspector from 1918 onwards.*

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has to be sufficiently warmed for use during meals and to be placed under the charge of a responsible person and be kept clean.

* Since August, 1921, an order has been made regarding welfare conditions in an individual factory.

The Act further provided that "orders may be made contingent in respect of particular requirements upon application being made by a specified number or proportion of the workers concerned, and may prescribe the manner in which the views of the workers are to be ascertained," and may "provide for the workers concerned being associated in the management of the arrangements, accommodation, or other facilities for which provision is made where a proportion of the cost is contributed by the workers; but no contribution shall be required from the workers in any factory or workshop, except for the purpose of providing additional or special benefits which, in the opinion of the Secretary of State, could not reasonably be required to be provided by the employer alone, and unless two-thirds at least of the workers affected in that factory or workshop, on their views being obtained in the prescribed manner, assent."

Under these latter provisions no order had been made before the close of 1921, but the way is clearly open for a new initiative by the workers, and in many factories a share in management of welfare arrangements by workers through works' welfare committees had indeed begun before the War. This share was further developed during the War and has blossomed out in many new ways since 1918. In 1916, in a large national factory, I found a workers' welfare committee, elected on their own initiative, fully developed with an income of £50 a week. The committee members were nearly equally men and women, representing every branch of work, one member representing the management.

The funds were raised by agreed deductions from wages, no other collections being allowed in the factory. Regular subscriptions were made to local hospitals, dispensaries, and to prisoner-of-war funds. Newspapers were provided daily in the canteen and concerts arranged twice weekly. "Whatever we want we can have," said a member of the committee to me in describing the activities of his committee.* In a printing works in 1918 a shop committee, consisting of eleven members, two representing the employers and nine the workers (four the women and five the men), looked after all the welfare arrangements, including management of the canteen, alterations in hours, and wages questions. When the Factory Inspector found the five hours' spell being exceeded, the alterations necessary in arrangements of work were made by the shop committee. In a northern tailoring factory employing many women there was, in 1917, and still flourishing in 1921, a "Workers' Trustees Council" on which workers of over ten years' standing in the factory served. Their special function was to consider and report to the firm suggestions made by the workers, and some of the most fundamental, with regard to hours, have been carried into effect. In a large stationery factory—where a Whitley Works Council dealt with employment, wages, and staff questions—a specially elected

* Annual Report of Chief Inspector for 1916, p. 10. The following and many more examples can be seen in subsequent Annual Reports, and in an account of works' committees issued by the Ministry of Labour, and in the organ of the Welfare Workers' Institute.

committee dealt with the canteen and sports questions, and special education and health officers with continuation classes and sanitation and health questions; the whole welfare organisation was known as the "Personal Service Department." In a woollen factory with representative committees and with well-developed canteen, rest, and recreation rooms and other provisions for health and welfare, the works' welfare magazine took the name *Service*, and its first editorial, May, 1919, said: "We want to prove to the world that the primary function of industry is service."

Examples could be multiplied from the experience of the Inspectorate of various types of works' committees with practical co-operation of workers and management. These committees, building on a basis of fairness in wages and other fundamentals, showed that a very good cement had been found in joint work for welfare, for the building up of peaceful industrial relationships, even before the formal development of joint councils of the Whitley type had begun. It has been one of the great satisfactions for the Inspectorate, when preparing by systematic enquiry for welfare orders or for the making of welfare pamphlets, to come upon long, modest, almost unnoticed, histories of welfare institutions in old-fashioned mills and factories. There is, as Prince Kropotkin pointed out in his "Fields, Factories, and Workshops," a survival all over England of smaller factories and industries helping to keep alive an older social atmosphere than that of the "factory system." Something has certainly lived on in our country that partly

accounts for the definite experience, that representative works' committees can revive or replace the more personal relationships formerly existing between management and workers in manufactures.

Returning for a moment to the legal and official provision for the workers' share in welfare activities, the sudden falling away of employment in the summer of 1920 limited the developments in this direction, so far as individual factories are concerned, for the remainder of the period with which this book deals. In the larger matter of consultation with joint councils for trades, when draft orders were considered for welfare and for regulation of dangerous processes or other matters, great progress has been made—*e.g.*, in the furniture, laundry, pottery, building, and silk trades. The Home Office steadily proceeded with the making of welfare orders, which were generally received with enthusiasm by workers and by many employers as instalments of reforms long overdue; also with the helpful series of welfare pamphlets* designed to spread a requisite knowledge of successful experiments on which good hygienic and welfare arrangements can be built up in factories and workshops.

At the onset of the almost catastrophic degree of unemployment in 1920—at the moment when industry appeared to be in full flow of life and energy—the interest of the community swung

* Published by H.M. Stationery Office: (1) Protective Clothing; (2) Messrooms and Canteens; (3) Welfare Supervision; (4) First-Aid and Ambulance; (5) Ventilation; (6) Seats for Workers; (7) Lighting in Factories and Workshops; (8) Cloakrooms, Washing Facilities, Drinking Water, and Sanitary Accommodation.

round inevitably from the evolution of a better order within industry to the primary problem of restoration of that ebbing life and energy. Never could the mutual interdependence of aims for successful application of material and labour in industry and for health and welfare of the human agent in production be more conclusively shown. Nor could the social and economic value of institutions making for harmonious co-operation between organisers of industry and the manual workers, in constructive self-government within the factory system, be more dramatically demonstrated.

It had been a splendid and cheering experience at the brief time of activity, when the women and girl munitioners and substitutes for men were being re-absorbed in their old occupations, in 1919 to 1920, to learn from the Inspectors who were revisiting textile and clothing factories, laundries, potteries, ropeworks, and other peacetime industries of women, of the new demands for improved conditions that the women were making and with good effect. It was the more cheering because the women had behaved very well in the unselfish spirit in which they had gone out from their interesting temporary occupations. They left new welfare behind them for the returning men, and they spoke to the Inspectors with pride and dignity of the new amenities growing up in their own old workplaces. Large numbers of women munition workers had been recruited from the old-time industries with unreformed conditions of personal hygiene, and they rightly showed a marked reluctance to accept the old bad standards. Alert young managers, back

from the field of war, quickly took the hint and moved their old directors into the new and right direction. "We have seen the impossible undertaken and accomplished, and we want to carry on here too," was the keynote struck by some of them. New standards had, of course, been tried and their value proven in production for the nation; yet there was something greater than the realisation by employers of the possibility of more harmonious relations and the higher efficiency to be gained by better conditions of work. There was a widened outlook and a new spirit of comradeship for the workers in many young employers lately returned from the War, and a readiness to put responsibility on to workers' representatives. Managers would "speak with enthusiasm of the general interest and communal responsibility that has resulted" from the activities of representative works' committees, and would praise the "eminently practical" nature of their proposals.* In socially backward, rough industries, where even elementary requirements of the Factory Act had still to be forced on the attention of occupiers, the Inspectors hoped for an awakening through the application to them of the new stimulus of a welfare order. In the trades that were little organised from the workers' side enquiries began to come from individual workers—a hopeful sign—as to when an order might be expected in their particular trade.

The effect in some factories with old-established

* See Annual Report of the Chief Inspector, 1919, chapter viii., and Annual Report of Chief Inspector, 1920, chapter vi.

welfare institutions of the introduction of representative works' committees has been remarkable in the advance of the workers in self-reliance and interest in their work, and in initiative in developing better conditions. Most striking in their activities are some of the works' committees in industries where the constitution of the committee has been approved by the Joint Council for the trade. In one such factory the accomplished welfare superintendent has been enrolled a member of the trade union. She is secretary of the works' committee, and the elections of the committee are carried out under the care of the trade union secretary. Here the careful supervision of the health and safety sub-committee of the works' committee is evident in the excellence of the fire drill and other arrangements and the good, coloured "safety first" notices at the machines. The note of authority that is apparent in the rules drawn up by the committee reflects the representative basis of the government of daily life in the factory. An extensive, well-chosen library is an outstanding feature of the social arrangements.

The immense advantage for future control of many risks and inconveniences, as well as promotion of constructive welfare work in industry, that may be reaped from the vigilance of workers, practised in methods of self-government, is so obvious after seeing some of their earlier achievements that one can only marvel that it has taken so long for the "captains of industry" to begin to make the discovery. The position of influence over the minds of workers held in the old-time craft industries by

the "master" craftsman can, it appears, in a new way, be regained in modern factories with their specialised production. The whole organisation of great industry is necessarily so intricate and complicated that with the added machinery of internal factory government, by committees, a "master organiser" is certainly necessary to the success of the undertaking. This will become increasingly clear to all workers capable of entering into the meaning of their surroundings, when their share in self-government grows and their contact with the organiser becomes closer. Already eloquent tributes may be heard from individual workers to the "wonderful" organising gifts of the employer or manager where the boon of representation has been conceded to them.

Notwithstanding all the wonderful discoveries and inventions multiplying power to increase wealth that could have been turned to the social welfare and happiness of the worker, the factory system of the nineteenth century failed portentously on this social side. It failed through its blind and too often barbarous neglect of the really great part that can be played both in workmanship and in organisation by the spiritually endowed human agent of production. Man, woman, young worker, or child, with their varying needs and capacities, they were all alike "hands." Their moral claims to a secure share in the good things—the wealth and the welfare—that their labour helped to buy for the whole people were not the only things denied to them. They have only won through to the possibilities of the new position that lies ahead (when industry

can be revived), through sufferings and trials that are difficult now to imagine, but of the story of which no responsible thinker or leader in the nation's affairs should ever be allowed to remain ignorant.

"In the struggle for life to which industrial undertakings are subject," said the Belgian Vandevelde many years ago, "the final victory is reserved for those who know how to meet their rivals not only with the most perfect machinery, but yet more with the best human material, the most solid array of moral and intellectual forces."

That was a warning that need not have fallen on deaf ears, even in an advowedly competitive society, and that might have been understood by the factory organisers of the nineteenth century. It is a new world that has to be faced now, and although we should not forget that saying, we may better dwell on the thought that harmony in industrial relationships promises to be the natural outcome of associated human effort for the sound, plentiful production that mankind so greatly needs and that may minister to a reviving desire for fitness and beauty in the world.

APPENDIX I

DANGEROUS AND UNHEALTHY INDUSTRIES

Regulations made by the Secretary of State for Processes Certified as Dangerous under Section 79, Factory and Workshop Act, 1901.

	1. Date of		2. Class of Manufacture, Machinery, Plant, Process or Description of Manual Labour.	3. Kind of Risks.	4. Nature of Injuri to be Prevented.
	Certificate.	*Regulations.*			
1.	Feb. 24, 1921.	Dec. 19, 1921.	1. **Aerated Water.**—Manufacture of, and processes incidental thereto.	Accidents from bursting bottles. Exposure to wet.	Injury to life an limb from fra ments of burstin bottles. Injury to healt from wet.
2.	May 9, 1892.	—	2. **Arsenic.**—Extraction and use of.	Poisonous dust.	Eczematous eru tions. Gastro - intestin symptoms.
3.	Aug. 26, 1907.	Dec. 30, 1908.	*3. **Benzine.**—Manufacture of nitro and amido derivatives of and of explosives with dinitrobenzol or dinitrotoluol.	Poisonous fumes and dust.	Profound chang in the conditio of the blood. Muscular a nerve affection eye affections.
4.	June 6, 1907.	June 26, 1908.	4. **Brass.** — Casting of, or any alloy of, copper with zinc.	Injurious fumes.	Brass casters' ag or fever.
5.	Oct. 29, 1910.	—	5. **Briquettes.**—Manufacture of patent fuel with addition of pitch.	Injurious dust.	Ulceration of skin. Epitheliomatous cancer. Eye troubles.
6.	March 7, 1911.	April 16, 1912.	6. **Bronzing** with dry metallic powders in letterpress printing, lithographic printing, and coating metal sheets.	Injurious dust.	Respiratory irrit tion. Gastric distur ance.

* See footnote to p. 290.

5. *Chief Preventive Measures Imposed by the Regulations.*	6. *Remarks.*
(*a*) Machines to be so constructed, placed, and fenced as to prevent accident from bursting bottles. (*b*) Face and eye guards, hand and arm guards, to be supplied to the workers and worn by them. (*c*) Waterproof aprons, boots, and clogs to be supplied.	First certified Sept., 1896. Special rules dated Aug., 1897, were superseded by these Regulations, 1921.
Note.—There are no regulations at present, but under Factory and Workshop Act, 1901, Sects. 74 and 75, mechanical ventilation must be provided to prevent inhalation of injurious dust, vapour, etc., and washing conveniences must be provided; and persons are excluded from workroom where arsenic gives rise to dust, and provision for meals must be made elsewhere.	Formerly included in Special Rules for Paints and Colours, which were revised in 1907 for Lead risks only. (See No. 30.)
(*a*) Removal or prevention of fumes or dust. (*b*) Effective ventilation. (*c*) Overalls, gloves, clogs, supplied to workers. (*d*) Lavatories, baths, and prohibition of meals in workrooms. (*e*) Medical examination and power of suspension.	Special Rules, 1908, rendered obsolete by Chemicals, No. 9.
(*a*) Exclusion of female workers from casting shop. (*b*) Exhaust ventilation for removal of fumes at points of origin. (*c*) Washing accommodation.	First certified July 10, 1896. Special Rules, dated 1896, were rendered obsolete by these Regulations, 1908.
Note.—Precautions voluntarily adopted by employers, *i.e.*— (*a*) Prevention of escape of dust by boxing-in elevators. (*b*) Exhaust ventilation for removal of dust. (*c*) Protective clothing; goggles. (*d*) Cloakroom.	Draft Regulations withdrawn, 1913, after Public Enquiry and on the voluntary adoption by occupiers of precautions in Column 5.
(*a*) Exhaust ventilation and appliances to prevent escape of dust into the air of the room. (*b*) Protective clothing supplied to workers. (*c*) Washing accommodation and place for outdoor clothing.	—

	1. Date of		2. Class of Manufacture, Machinery, Plant, Process or Description of Manual Labour.	3. Kind of Risks.	4. Nature of Injuries to be Prevented.
	Certificate.	Regulations.			
7.	Oct. 6, 1921.	—	7. Buildings in course of construction, alteration, repair, or demolition.	Accidents from falls or falling bodies or from machinery. Plumbism (painters and plumbers).	Injury to life or limb. Plumbism.
8.	April 24, 1914.	Nov. 28, 1921.	8. Celluloid.—Manufacture, manipulation, and storage of.	Fire (highly inflammable material).	Injury to life or health from fire.
9.	Dec. 14, 1920.	—	*9. Chemicals.—Manufacture and processes incidental thereto carried on in "Chemical Works" (as defined in the Schedule).	Caustic liquids in vats, etc. Poisonous gases. Injurious dust. Explosions and fire.	Burns, etc., by falling into vats, etc., of acid. "Gassing." Respiratory affections from irritant dust. Inflammation of eyes and other eye injuries. Injuries due to explosions.
10.	June 27, 1913.	Aug. 15, 1913.	*10. Chromate and Bichromate of Potassium, Sodium, manufacture of.	Injurious dust and fumes.	Peculiar lesions, erosion of septum of the nose, and chronic ulceration of the skin.
11.	—	Dec. 21, 1911.	11. Cotton Cloth Weaving.	Humidity. High temperatures.	Ill health and discomfort.

* These Chemical Regulations were confirmed on July 11, 1922, and in con

5. *Chief Preventive Measures Imposed by the Regulations.*	6. *Remarks.*
(*a*) Provision and maintenance of suitable scaffolding of sound material. (*b*) Efficient lighting of working places and approaches. (*c*) Special safeguards for working on roofs. (*d*) Safeguards for use of hoisting appliances, cranes, etc. (*e*) Fencing of machinery and safety provisions for boilers. (*f*) Provision for painters and plumbers of washing facilities; prohibition of taking meals and of depositing clothing in workshop; moist method to be adopted for rubbing down or scraping painted surfaces containing lead.	In draft June, 1922.
(*a*) Limitation of the amount of material or of finished articles allowed in workrooms or on the premises. (*b*) Method of storage prescribed. (*c*) Precautions respecting lights, stoves, smoking, use of sealing wax. (*d*) Means of escape and of extinguishing fire. (*e*) Competent person to supervise and enforce the regulations.	—
(*a*) Fencing of vats and gangways, etc. (*b*) Adequate lighting. (*c*) Breathing apparatus, oxygen, etc., for rescue in case of "gassing." (*d*) Protective clothing supplied to workers. (*e*) Exhaust ventilation and prevention of escape of dust from certain machines.	In draft June, 1922. First certified April 24, 1892. Special Rules to be superseded by these Regulations.
(*a*) Exclusion of persons under 18. (*b*) Removal or prevention of steam and dust. (*c*) Lighting and fencing of vats, etc. (*d*) Protective clothing and respirators supplied. (*e*) Cloakroom, lavatory, baths, provided. (*f*) Medical examination and power of suspension. (*g*) First aid for treatment of small ulcers. (*h*) Daily cleaning floors, stairs, etc.	Special Rules, 1900, were superseded by these Regulations, 1913, and these to be revoked by Chemical Regulations. (See No. 9.)
(*a*) Hygrometrical control. (*b*) Humidity tables and temperature limit. (*c*) Chemical and volume standard of ventilation. (*d*) Purification of water for steam.	These Regulations were made under the Cotton Cloth Factories Act, 1911.

sequence the Benzine (No. 3) and Chromate (No. 10) Regulations were revoked.

	1. *Date of*		2. *Class of Manufacture, Machinery, Plant, Process or Description of Manual Labour.*	3. *Kind of Risks.*	4. *Nature of Injuries to be Prevented.*
	Certificate.	*Regulations.*			
12.	Sept. 30, 1902.	Oct. 28, 1904.	12. **Docks, Wharves, and Quays,** loading and unloading at, and loading, unloading or coaling any ships in any dock, harbour, or canal.	Risks to life and limb from dangerous machinery and appliances, and ladders and corners, and lack of fencing for dangerous hatchways, etc.	Injury to life and limb by accident from machinery etc. Drowning, falls etc.
13.	—	—	13. **Earthenware and China.** (See under **Potteries,** No. 32.)	—	—
14.	Aug. 3, 1903.	Nov. 24, 1903.	14. **Electric Accumulators,** manufacture of.	Poisonous dust and fumes (lead).	Plumbism.
15.	Aug. 9, 1907.	Jan. 1, 1909.	15. **Electricity.**—Generation, transformation, distribution, and use of.	Danger to health or to life and limb from shock, or burns, or fire.	Deep and inflamed burns and destruction of tissue from continuous currents. Sudden arrests of heart's action or of respiration, violent muscular contraction chiefly from alternating currents.
16.	Sept. 21, 1908.	Dec. 22, 1908.	16. **Enamelling,** vitreous, of metals or glass.	Poisonous dust.	Plumbism.

5. *Chief Preventive Measures Imposed by the Regulations.*	6. *Remarks.*
(*a*) Exclusion of boys under 16 under certain conditions. (*b*) Fencing of dangerous parts, of footways, gearing, motors, etc., and prohibition of interferences by unauthorised persons. (*c*) Lighting of dangerous places at night. (*d*) Provision of gangways; slippery stages to be sanded. (*e*) Testing of chains, gear, etc. (*f*) Provision for rescue from drowning.	—
—	—
(*a*) Exclusion of young persons under 18 and women from manipulation of dry compounds of lead and from pasting. (*b*) Medical examination and suspension. (*c*) Prevention, or removal by exhaust ventilation, of dust and fumes. (*d*) General ventilation and ample cubic space. (*e*) Protective clothing and cloakroom. (*f*) Washing facilities.	—
(*a*) Highly technical safeguards for construction, installation, protection and working of apparatus, conductors, motors, switches, etc. (*b*) Provision for earthing, insulating stands, adequate space. (*c*) Technical qualifications for operators, avoidance of solitary working. (*d*) Instructions for treatment of the injured to be affixed.	—
(*a*) Exclusion of young persons under 16 years of age. (*b*) Periodic medical examination with power of [suspension. (*c*) Ample cubic space. (*d*) Efficient lighting. (*e*) Good condition of floors and cleaning of same. (*f*) Prevention of or removal by exhaust ventilation of (*g*) Washing facilities. [dust, spray, or fumes.	—

	1. Date of		2. Class of Manufacture, Machinery, Plant, Process, or Description of Manual Labour.	3. Kind of Risks.	4. Nature of Injuri to be Prevented
	Certificate.	*Regulations.*			
17.	June 6, 1902.	Aug. 19, 1902.	17. **Felt Hats**, manufacture of, where inflammable solvent is used.	Fire and explosions.	Burns and shoc
18.	Sept. 22, 1902.	June 23, 1903.	18. **File Cutting** by hand.	Metallic lead dust.	Plumbism.
19.	May 11, 1905.	Feb. 26, 1906.	19. **Flax and Tow**, spinning and weaving of.	Irritant dust, artificial humidification and high temperatures.	Phthisis wi dyspnœa a other respirat trouble. Circulatory a cardiac oppr sion from mo heat. Skin troubles, zema, and fo culitis.
20.	Oct. 14, 1908.	Oct. 15, 1909.	20. **Grinding of Metals and Racing of Grindstones.**	Irritant dust (silica and gritty particles, also steel and iron powder). Accidents. Moisture.	Fibroid phth asthma, other respirat troubles (exc sive mortal among grinde Later stages, i quently tub cular. Eye injuries fr flying motes a sometimes fu ther acciden from dimm vision.

5. *Chief Preventive Measures Imposed by the Regulations.*	6. *Remarks.*
(*a*) Ventilation of proofing, and stove and drying rooms. (*b*) Restriction on the number of wet spirit-proofed hats per cubic feet of air space in workroom. (*c*) Spirit-proofed hats to be opened out singly and exposed before placing in stoves.	—
(*a*) Cubic space and floor space prescribed per "stock." (*b*) Flooring to be substantial, washable, and in good repair. (*c*) Good general ventilation. (*d*) Washing facilities. (*e*) Protective clothing to be worn.	—
(*a*) Maintenance of prescribed standard of purity of the air. (*b*) Exhaust ventilation for removal of dust. (*c*) Hygrometrical control of humidity and temperature. (*d*) Purity of water for humidifying. (*e*) Efficient splash-boards in wet spinning. (*f*) Protective clothing and respirators to be provided. (*g*) Sound condition of floors and drainage. (*h*) Cloakroom accommodation.	First certified Jan. 3, 1894. A Departmental Committee which was appointed, 1911, to consider the amendment to these Regulations reported 1914, and their recommendations were issued as an informal draft of amended Regulation. Further steps have not yet been taken.
(*a*) Removal of dust by exhaust ventilation, etc. (*b*) Separation of "racing" from other processes. (*c*) Respirators to be worn while "racing." (*d*) Special cleansing of floors, belt races, and walls, ceilings, and windows.	—

	1. Date of		2. Class of Manufacture, Machinery, Plant, Process or Description of Manual Labour.	3. Kind of Risks.	4. Nature of Injuries to be Prevented.
	Certificate.	Regulations.			
21.	Jan. 29, 1907.	Aug. 28, 1907.	21. **Hemp and Jute** spinning and weaving.	Vegetable dust. Liability to tetanus in case of lesions of the skin. High temperature in spinning and humidity. Cold and draughts in preparatory process.	Respiratory troubles. Tetanus likely to follow. Accidents from machinery. Rheumatism common.
22.	Oct. 15, 1920.	Dec. 29, 1921.	22. **Hides and Skins.*** —Dry or dry-salted, imported from Africa (including Madagascar) or Asia (including Japan and Malay Archipelago), handling of.	Anthrax spores in the material.	Anthrax infection through abrasion of the skin or by inhalation of infected dust.
23.	May 23, 1907.	Dec. 20, 1907.	23. **Horsehair from China, Siberia, and Russia,** use of.	Anthrax spores in the material.	Anthrax.

* Under the Anthrax Prevention Act, 1919, provision has been made and of all wool and animal hair from Egypt. (See also Nos. 37 and 38.)

5. *Chief Preventive Measures Imposed by the Regulations.*	6. *Remarks.*
(*a*) Maintenance of prescribed standard of purity of the air. (*b*) Exhaust ventilation for removal of dust. (*c*) Minimum temperature in certain rooms. (*d*) Hygrometrical control of humidity and high temperature in other rooms. (*e*) Respirators to be provided in certain processes.	—
(*a*) First-aid equipment. (*b*) Cautionary notice respecting anthrax to be affixed. (*c*) Washing facilities. (*d*) Cloakroom and mess-room accommodation. (*e*) Provision for disinfection or destruction of wrappers in which hides and skins have been packed (in tanneries only). *Note.*—The Regulations (*a*) and (*e*) above apply to docks, warehouses, and quays, as well as factories.	First certified June, 1903. The Special Rules, 1902, were converted into Regulations, 1921.
(*a*) Exclusion of persons under 18 from employment on material not disinfected. (*b*) Register of prescribed particulars of disinfection. (*c*) Material not disinfected to be stored separately, and opened and sorted separately, and in connection with exhaust ventilation. (*d*) All manipulation subsequent to opening and sorting prohibited until material has been disinfected. (*e*) Willowing and dust-extracting machines to be provided with exhaust ventilation. (*f*) All dust to be intercepted and burnt. (*g*) Protective clothing to be provided and respirators. (*h*) Cloakroom, meal rooms, and washing facilities. (*i*) First-aid requisites. (*j*) Prohibition of work on material not disinfected if having open cut or sore. (*k*) Cautionary notice respecting anthrax to be affixed.	—

for the disinfection, on arrival in Great Britain, of goat hair from India,

	1. Date of		2. Class of Manufacture, Machinery, Plant, Process, or Description of Manual Labour.	3. Kind of Risks.	4. Nature of Injuries to be Prevented.
	Certificate.	*Regulations.*			
24.	Dec. 21, 1920.	Mar. 31, 1922.	24. **India-rubber.**—Certain processes incidental to the manufacture of, and of articles and goods made wholly or partially of india-rubber.	Poisonous dust (lead). Injury to health from volatile vapour. Accident from inflammable vapour.	Plumbism. Peripheral neuritis or inflammatory condition of nerves due to effects of bisulphide of carbon.
25.	Sept. 3, 1920.	Aug. 23, 1921.	25. **Lead,*** compounds of, including carbonate, sulphate, nitrate, and acetate of lead, manufacture of.	Poisonous dust and fumes (lead compounds).	Plumbism.
26.	Dec. 13, 1910.	Aug. 12, 1911.	26. **Lead.*** — Smelting of materials containing manufacture of red or orange lead and of flaked litharge.	Poisonous dust and fumes (lead compounds).	Plumbism.

* The Women and Young Persons (Employment in Lead Processes) nected with lead manufacture and in any process involving the use of lead be splashed with a lead compound, subject to medical examination, provision room and cloakroom, and cleanliness of tools, apparatus, and workrooms.

5. *Chief Preventive Measures Imposed by the Regulations.*	6. *Remarks.*
(*a*) Exclusion of all young persons under 18 and girls under 18 from any lead process, and of all young persons and women from mixing or incorporating dry compound of lead with rubber. (*b*) Exclusion of young persons under 18 from fume process, and those under 16 from a room where such process is carried on. (*c*) Limitation of employment in fume process of any person for more than 5 hours a day and more than 2½ hours at a time without at least 1 hour's interval. (*d*) Removal of dust and fumes by exhaust ventilation, and prevention of escape of fumes from vulcanising machines and troughs. (*e*) Protective clothing to be provided and worn. (*f*) Cloakroom and mess-room accommodation. (*g*) Washing facilities. [pension. (*h*) Periodic medical examination and power of sus-	First certified Dec., 1896. Special rules for vulcanising india-rubber by means of bisulphide of carbon, 1897, converted into these Regulations for India-rubber, 1922.
(*a*) Methods of controlling lead dust prescribed by damping, by ventilation, by careful handling of the materials. (*b*) Exhaust ventilation for removing fumes or means of preventing their escape into workroom. (*c*) Periodic medical examination and power of suspension. (*d*) Protective clothing provided and arrangements for (*e*) Respirators to be supplied. [washing same. (*f*) Cloakroom, mess-room, washing facilities.	First certified as dangerous, May 9, 1892. These Regulations supersede the Special Rules for White Lead dated June, 1899.
(*a*) Exclusion of young persons under 16 and women from any lead process. (*b*) Suppression or removal of dust or fumes by exhaust ventilation, damping, etc. (*c*) Provision of protective clothing and respirators in certain processes. [pension. (*d*) Periodic medical examination with power of sus- (*e*) Exclusion of persons from furnaces until ventilated. (*f*) Restriction of duration of work to 3 hours in dry flues or condensing chambers. (*g*) Provision of mealroom, clothing, and overall accommodation, washing facilities, and baths.	—

Act, 1920, prohibits altogether their employment in certain processes con-
compounds and causing dust and fumes, or in which the workers are liable to
of exhaust ventilation to remove dust or fumes, protective clothing, mess-

	1. Date of		2. Class of Manufacture, Machinery, Plant, Process, or Description of Manual Labour.	3. Kind of Risks.	4. Nature of Injuries to be Prevented.
	Certificate.	*Regulations.*			
27.	Aug. 24, 1906.	May 2, 1905.	27. **Locomotives and Waggons,** use of, on lines and sidings in or used in connection with premises under the Factory Acts.	Accidents from locomotives, etc., in motion by mechanical power.	Injuries to life and limb.
28.	June 2, 1892.	—	28. **Lucifer Matches,** manufacture of.	Phosphorus necrosis.	—
29.	Oct. 17, 1905.	Nov. 7, 1904.	29. **Mules, Self-Acting,** spinning by means of.	Accidents.	Injuries to life and limb from machines in motion.
30.	Dec. 1, 1906.	Jan. 25, 1907.	30. **Paints and Colours,** manufacture of.	Poisonous dust (lead).	Plumbism.
31.	Oct. 29, 1910.	—	31. **Patent Fuel,** manufacture of. (See under **Briquettes,** No. 5.)	—	—
32.	Aug. 25, 1911.	Jan. 2, 1913.	32. **Pottery.**— Manufacture or decoration of, or any process incidental there-	Poisonous dust (lead). Silica and other dust, heat, and humidity.	Plumbism. Phthisis or other respiratory disease or injury to health from

5. *Chief Preventive Measures Imposed by the Regulations.*	6. *Remarks.*
(*a*) Technical provisions as to position, and use of point rods, signal wires, condition and use of rails, supply of coupling poles, etc. (*b*) Provisions respecting movements of persons and of locomotives and waggons. (*c*) Efficient lighting after dark. (*d*) Exclusion of young persons under 18 from employment on certain capstans and as locomotive drivers, or as a shunter. (*e*) Protection of water gauges on boilers whether on locomotives or stationary.	—
Note.—The White Phosphorus Prohibition Act, 1908, forbids the use of white phosphorus in the manufacture of matches and also the sale of matches made with the same.	Special Rules, March 31, 1900, now obsolete, as white phosphorus is no longer allowed in the manufacture.
(*a*) Special fencing of machines and accessory gearing. (*b*) Duty laid on "minder" to ensure that no child cleans any part of the mule in motion; that no woman, young person, or child works between the fixed and traversing parts of the mule; and that no person is between those parts unless the moving part is stopped on the outward run. (*c*) "Minder" responsible for the starting of the mule.	—
(*a*) Exclusion of young persons and women. (*b*) Periodic medical examination, with power of suspension. (*c*) Exhaust ventilation to remove dust. (*d*) Protective clothing supplied. (*e*) Cloakroom, mess-room, washing facilities.	First certified 1892. Special Rules, 1894, superseded by these Regulations.
—	—
(*a*) Exclusion of women, young persons, and children from certain processes in the preparation of lead glaze, etc., and from cleaning in dipping house, and as regards a young person and child from employment as a dipper.	Earthenware and china manufacturing. First certified Dec. 24, 1892.

(*Continued on p.* 302.)

	1. Date of		2. Class of Manufacture, Machinery, Plant, Process or Description of Manual Labour.	3. Kind of Risks.	4. Nature of Injuries to be Prevented.
	Certificate.	Regulations.			
32.	Aug. 25, 1911.	Jan. 2, 1913.	32. **Pottery** (*contd.*) —to, and the making of lithographic transfers, frits, or glazes for use in such manufacture or decorations or processes.	Heavy weights.	inhalation of silica or other dust. Injury to health from excessive heat or humidity. Strain from lifting and carrying weights.
33.	Mar. 22, 1918.	April 26, 1919.	33. **Refractory Materials.** — Crushing, grinding, sieving, and other processes involving the manipulation of such materials.	Silica dust.	Injury to lungs from the inhalation of silica dust. Tuberculosis. Silicosis.
34.	Aug. 5, 1913.	April 4, 1914.	34. **Ships, Construction and Repair of,** in shipbuilding yards.	Accidents.	Injury to life and limb from falls and falling bodies.

5. *Chief Preventive Measures Imposed by the Regulations.*	6. *Remarks.*
(*b*) Exclusion of women, young persons and children from certain heavy work and work involving strain without a certificate of "permission to work"; and total exclusion of young persons and children from employment in wedging of clay, and of females from carrying saggars full of ware. (*c*) Periodic medical examination with power of suspension. (*d*) Protective clothing to be supplied, washed, repaired, and kept in proper custody. Respirators to be supplied in certain processes. [provided. (*e*) Washing facilities, cloakroom, and meal-room to be (*f*) Milk or cocoa to be provided for all women and young persons if working before 9 a.m. in certain processes. (*g*) Exhaust ventilation for all processes giving rise to dust (lead or flint, etc.), and ventilation of all rooms and of drying stoves. (*h*) Means for preventing excessive heat and humidity in workrooms and in ovens. (*i*) Special means for cleaning floors, benches, boards, etc., where lead glaze is used. (*j*) Special precautions as regards lead dust and splashing of lead glaze in majolica painting, aerographing, and lithographic transfers. (*k*) Limitation of hours of men as well as women in dipping and some other lead processes to 48 hours per week. Intervals prescribed in certain lead processes of $\frac{1}{2}$ hour every 4 hours or $4\frac{3}{4}$ hours for every person. (*l*) Power given to inspector to take samples of any material for analysis. [tions. (*m*) Works Inspector to supervise observance of regula-	Special Rules were established, 1894, amended in 1898, and again in 1903; after arbitration these Rules were in turn superseded by the present Regulations, 1913.
(*a*) Prescribed methods of controlling and removing dust by exhaust ventilation, damping, etc., and by prohibition of certain methods of work. (*b*) Provision of respirators.	—
(*a*) Sufficient supply of good materials for stages. (*b*) Construction of stages to be of sound material, secure, and erected by competent persons. (*c*) Gangways to be fenced, also openings in decks to be provided with covers. (*d*) Adequate lighting while work is in progress. (*e*) Ambulance and first-aid provision. (*f*) Competent person to supervise and enforce observance of regulations.	—

	1. Date of		2. Class of Manufacture, Machinery, Plant, Process or Description of Manual Labour.	3. Kind of Risks.	4. Nature of Injuries to be Prevented.
	Certificate.	*Regulations.*			
35.	Sept. 25, 1908.	June 30, 1909.	35. **Tinning of Metal Hollow-ware, Iron Drums,** and harness furniture. (Coating of metal articles with a mixture of lead and tin and lead alone.)	Poisonous fumes (lead).	Plumbism.
36.	—	—	36. **White Lead.** (See under **Lead Compounds,** No. 25.)		
37.	June 17, 1905.	Dec. 18, 1908.	37. **Wool, East Indian,** use of.*	Anthrax spores in the material.	Anthrax.
38.	June 17, 1905.	Dec. 12, 1905.	38. **Wool - Sorting,** willeying, washing, combing, and carding, and of goat hair, camel hair, and processes incidental thereto.*	Anthrax spores in the material.	Anthrax.
39.	Aug. 10, 1920.	—	39. **Woodworking Machinery,** use of.	Accidents from dangerous machinery. Injurious dust.	Injury to life and limb. Injury to health —respiratory troubles.
40.	June 1, 1907.	Aug. 6, 1907.	40. **Yarn,** heading of dyed, by means of a lead compound.	Poisonous dust (lead).	Plumbism.

* See footnote, p. 296.

5. *Chief Preventive Measures Imposed by the Regulations.*	6. *Remarks.*
(*a*) Exclusion of persons under 16 from tinning. (*b*) Exhaust ventilation for removal of dust and fumes over dipping and wiping, and over skimmings until their removal in a covered receptacle. (*c*) Removal of dust and refuse from workrooms. (*d*) Protective clothing and cloakroom for women. (*e*) Meal-room and washing accommodation. (*f*) Periodic medical examination with power of suspension.	First certified Jan. 1894. Special Rules superseded by these Regulations, 1909.
—	—
(*a*) Dust-extracting machines to be covered over and cover connected with exhaust fan so as to discharge dust into a furnace or intercepting chamber. (*b*) Protective clothing and respirators to be supplied for persons who collect and remove the dust.	—
(*a*) Scheduled wool or hair to be opened by skilled men only, and to be steeped in water or alternatively opened over a screen with an exhaust according to the Schedule. (*b*) Sorting boards must be as prescribed and also willowing machines. [willeying room. (*c*) Storage of wool or hair prohibited in sorting and (*d*) Provision for collection and removal of dust and (*e*) Floors to be sprinkled and swept daily. [refuse. (*f*) Protective clothing supplied and not removed unless disinfected or boiled. (*g*) Washing and meal-room accommodation. (*h*) First-aid requisites duty laid on workers to report any open sore or cut. (*i*) Power of inspectors to take samples of material.	—
(*a*) Provision of efficient stopping and starting gear on every woodworking machine. (*b*) Special fencing of machinery, particularly circular saws and planing machines. (*c*) Spacing of machines, and maintenance of surrounding floors in good condition and free from obstruction. (*d*) Adequate lighting, both daylight and artificial light. (*e*) Artificial warming of workrooms in cold weather.	In draft June, 1922.
(*a*) Exclusion of young persons under 16. (*b*) Exhaust ventilation for removal of dust draught to be tested and recorded quarterly. (*c*) Periodic medical examination with power of (*d*) Protective clothing supplied. [suspension. (*e*) Cloakroom and meal-room, if required in writing by (*f*) Washing accommodation. [chief Inspector.	—

APPEN

TABLE OF REPORTED CASES OF INDUSTRIAL POISONIN

(Small figures at right-hand corner of large

	1921		1920		1919		1918	
	M.	F.	M.	F.	M.	F.	M.	F.
LEAD POISONING*..	194[21]	36[2]	222[20]	21[3]	187[26]	20	124[11]	20
Tinning of metals	—	1	—	2	—	2	1	1
White lead	13[1]	—	17	—	10	—	—	—
China and earthenware	21[9]	13[2]	16[11]	8[2]	13[8]	8	5[1]	6
Litho-transfers	—	1	—	1	—	—	—	—
Vitreous enamelling	7	1	1	1	1	—	—	—
Coach painting†	14[1]	6	12	1	10[3]	1	12[3]	—
Paints used in other industries ..	12	—	7[1]	3	7[3]	2	12	3
Other industries	20[2]	10‡	32[2]	—	24[1]	1	19[1]	4
MERCURY POISONING	—	—	4	1	5	2	8	1
PHOSPHORUS POISONING	—	—	—	—	1	—	3	—
ARSENIC POISONING	1	—	3	—	4	—	3[1]	—
ANTHRAX	21[5]	4[1]	42[10]	6[1]	46[6]	11[3]	46[5]	26[5]
TOXIC JAUNDICE	1[1]	—	6[3]	—	2[2]	1[1]	7[2]	27[8]

* Total cases in factory and workshop.

† All the female cases in coach painting were du

‡ All due to heading of yarn.

§ Of these cases four were due to heading of yar

‖ In 1913 eighteen cases among women were du

¶ In 1908 seven cases among women were due t

DI[illegible] II

AND ANTHRAX (SECTION 73 OF THE FACTORY ACT, 1901).

figures indicate fatal cases, included in totals).

1917		1916		1915		*Average* 1912–14		*Average* 1909–11		*Average* 1906–08		*Average* 1903–05		1900	
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
272[19]	45[2]	318[20]	30[1]	356[21]	25	468[32]	55[1]	512[32]	63[3]	524[28]	95[2]	501[22]	100[1]	884[33]	174[5]
—	2	3	1	2	1	10	1	13	4	10	8	9	4	2	3
15	2	16[1]	2	36	4	24[1]	3	34[1]	2	83[3]	3	100[1]	5[1]	325[5]	53[1]
8[5]	7[2]	15[6]	8[1]	13[5]	13	33[10]	23[1]	38[4]	38[3]	52[6]	57[2]	39[3]	56	95[4]	105[4]
—	—	—	—	—	—	—	1	—	1	1	5	1	2	7	3
1	—	5	—	5[1]	—	8	—	12	1	5	1	1	2	8	3
20[2]	1	33	—	39[5]	—	70[4]	1	89[6]	—	74[4]	1	60[4]	—	70[5]	—
17[1]	3	18	2	16[2]	—	42[2]	4	45[1]	4	39[2]	5	36[2]	4	59[5]	—
57[4]	19§	50[3]	11	47[1]	7	63[2]	14‖	56[3]	8	57[3]	16¶	42[1]	12	68[4]	18
6	11	11	7	6	—	13	1	10	—	5	2	6	—	7	2
3	—	2	—	3[1]	—	—	—	1	—	—	—	1	1[1]	1	2
30[5]	—	—	—	3	—	4	—	5	2	11[1]	1	4	—	15[3]	7
71[11]	22[1]	77[14]	28[2]	45[7]	5	50[6]	7	48[9]	9[2]	44[11]	13[3]	43[11]	9[2]	28[5]	9[2]
45[2]	145[42]	84[23]	122[34]	—	—	—	—	—	—	—	—	—	—	—	—

to painting perambulators, except the one in 1917.

and twelve to bullet and shrapnel making.

to heading of yarn.

heading of yarn.

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